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# TRANSACTIONS

OF THE

# ESSEX AGRICULTURAL

# SOCIETY,

FOR

# 1846.

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DECEMBER, 1846.

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# MR. NEWELL'S ADDRESS.

Mr. President and Gentlemen of the Essex Agricultural Society,

This Society, from its commencement, has annually been addressed by men, belonging to what are termed the learned professions; and it is strictly true, that they have been men of extensive learning, of close observation, of scientific skill, and in many instances, of practical experience. Their productions have done much to instruct, interest and encourage the farming community, in the prosecution of their labors.

But for once, the Trustees, by their committee, have selected one whose business for the most part, has been to labor with his hands, and conduct the ordinary operations on a farm;—an occupation I shall always hold in honorable estimation, but one which I frankly acknowledge prepares a man rather for silent action, than for the writing and the delivery of a public address. Being called upon as I was, I have trusted to the judgment of my friends, rather than to the inclination of my own feelings, and appear before you to do what I may to aid a cause upon which all are more or less dependent.

JUN 15 1918

Although this may be considered peculiarly the farmer's holiday, it should be a pleasing and grateful reflection, that there are assembled with us, all the various occupations, which go to make up society, and probably no location in the county can convene more of those not wholly devoted to agriculture than this. I wish I had the learning and ability requisite to satisfy all your reasonable expectations; but for this I must hope in vain. Still I hope to speak with the more confidence, as I have always found the literary man, the lawyer and the merchant, the farmer's friend. It cannot be expected

that I should go into a learned analysis of soils, or the mode and operations of Nature, in furnishing chemically or otherwise, the means of sustaining vegetable life; or to show philosophically how certain combinations of soil, aided by manure, are made capable of producing the greatest amount of food and other necessaries for man and beast. I must beg of you for this time to put up with some plain home-spun remarks upon a few subjects within my limited observation.

I am aware that some general rules will apply to all farms and all soils; still a vast amount of labor will be lost, if a particular process of cultivation well adapted to one soil, should be pursued upon another and a different soil; and in my apprehension, from this cause has arisen many of the strong prejudices to book-farming. An individual sees in some periodical or journal, a certain course recommended to obtain a superior crop of some article. He follows out the prescriptions, but without inquiring whether his soil is of a similar texture to the one which gave the large product. From some cause his experiment proves a failure, and without sufficient investigation into the cause of the failure, he undertakes to attribute his disappointment to book or scientific farming; when, in fact, it might be for the want of the knowledge necessary to adapt the crop to the soil. Here, perhaps, I ought to make an apology for intimating that the lord of the soil can possibly be ignorant of its compositions and capabilities. But on this point, allow me to say, I think I speak from personal experience. For aught I know, I have had the ordinary means, in common with other farmers, to inquire and ascertain by experiment and otherwise, the properties which compose soils, the crops to which they are best adapted, and the various kinds of manure best suited to the several kinds of soil; and I am free to say, that I yearly loose both labor and manure, (two important items upon a farm) for the want of means I do not possess, of becoming acquainted with the science of agriculture, with chemical analysis. By these phrases, I mean simply the power to determine the qualities of soils, and what ingredients are necessary to be incorporated with the several varieties, to render them highly productive. I say highly productive, because I am confident that at the present price of labor, small crops will run the farmer in debt.

I know nothing of theoretical chemistry, and I should not venture to explain a principle philosophically; still I would be the last to des-

pise or undervalue either. I consider them the foundation on which farming must stand, when applied with industry and economy. What is philosophy, but knowledge so explained that it can be practically applied? What is theoretical chemistry, but known principles, worked out and put on paper, so that the practical farmer can work out those principles in the soil? It is settled that chemistry can be applied practically, and with a good degree of certainty; and I am confident that the farmer must take advantage of the researches made in it, or an intimation will be true that I lately saw in an agricultural journal,—that the man who has more land than he can cultivate with his own individual labor, will grow poor; though I should be loath to be compelled to admit that this position is true as a general thing, for a course of years. It may be that the extra demand for labor on public works, and for manufacturing purposes, has for some time past crowded up the price of labor, above what the grower of grain crops could well afford to pay. But the profits which have drawn labor into those channels, will be limited in their duration, if all interests are equally cared for. And before the farmer rises up in opposition to any investment which he may conceive to be more profitable than his own, let him first inquire, have the same energy, the same skill, and the same untiring perseverance, been exerted in my pursuit, as have been in perfecting machinery, in preventing loss in labor, and employing the occupants upon that portion of labor to which they were best adapted?

I believe every man who has been through our factories and workshops, will be constrained to acknowledge, if the same system of allotment of labor could be as judiciously assigned upon the farm as is there, nearly double the amount of labor would be accomplished. I admit that there is more difficulty in setting off exclusive portions of work to individuals on the farm, than in manufacturing establishments, especially if our farms are to be so cut up that every man is to do his own labor. But for this small-farm theory I have no sympathy. I am aware that in making the assertion, I go counter to the general sentiment of the day. Still, allow me to say, in order that farming may be brought to its highest perfection, I believe it must be under a policy of liberal expenditures, by men wholly devoted to the profession; and of a natural enterprise, that would not rest satisfied with over-seeing the amount of labor they could accomplish with their own hands;—and I therefore think that the advo-

cates for small farms, so far as their influence extends, (and I consider it somewhat general,) have a tendency to deter our young men of enterprise from engaging in the cultivation of the land, thereby depriving the farming community of the aid of the best energy and the most promising enterprise; a portion of which, I feel we absolutely need and are justly entitled to.

When the time comes that the current of public opinion shall change on this subject, and men of wealth shall enter upon farming with the same energy they have engaged in manufactures, they will devise means whereby it will become a living business and a large business; and instead of being pointed to a small farmer with forty acres, showing he can maintain himself, you will be pointed to a large farmer with his one thousand acres, and showing conclusively that he can so arrange his labor that he can support himself and give a fair dividend upon his whole investment.

Upon new lands, little need be done to obtain a crop, but to burn to ashes the forests that have been accumulating for ages, and to sow the seed. But where the remedies have been neglected, a long series of cropping has exhausted its early fertility, and it will not recover but by the application of manures to restore what the crops or evaporation have drawn away. How can this be most effectually accomplished? How so well as by a knowledge of the materials which compose the surface soil, and also by a knowledge of the substances in which the soil is deficient, in order that the proper remedies may be applied? Far be it from me to ask the farmer to commit to memory a dictionary of hard names; but I do consider it necessary to his improving his land, and obtaining with any good degree of certainty abundant crops, that he should be familiar with certain fixed principles that alone can secure them. If a learned and scientific man could be engaged to visit every section of the county or commonwealth, go on every description of land and analyze the soil, and explain the effects of manure on the several varieties, and also the effect of one kind of soil when mixed with another; and by relating experiments, show what is the most perfect composition, it would fix some standard for improvement, and the crops and the different manures would be put upon the right spot. Should a competent individual be appointed to this task, the farmers themselves, as I believe, would reap a benefit that would enable them to pay him a salary, equal to any in the Commonwealth.

But until the farmers themselves feel that they need instruction on this subject, we must move on by a slower process to the attainment of knowledge, and by accident or otherwise establish a theory that will commend itself to general practice.

For the purpose of producing thought and inquiry, I will venture to give you some crude ideas on *soils* and *manures*, on *crops* and *animals*.

I believe soils, to be made the most productive, should be perfectly pulverized by some process. Hand-spading or trenching is probably the most perfect process; still it may be doubted, whether at the present price of labor, it will meet the cost on any extended scale. To such perfection has the plough been brought, it will, if sufficiently and properly used, accomplish this desirable object to a good degree, with the use of the harrow and roller;—an article not any too common, when we consider its use is to crush the lumps of earth brought up by the harrow, to press down the sods and small stones on the surface, and to leave a slight crust to prevent the escape of moisture until the crops in some measure do it themselves.

I do not believe that soils generally, are improved by spreading upon them substances of like quality of which they are composed. It is not so much the quantity applied to the soil, that changes and improves it, as it is the quality, being one in which it was before deficient. If this is so, then all manures, mixed with earth, for top-dressing or ploughing-in, should be composted in reference to the soils to which they are to be applied. All our sandy soils and some loamy ones, would, in my estimation, be greatly improved by a generous mixture of clay; the stiffer the clay the less quantity will produce the desired effect. Our frosts will readily crumble it down, and it will enable the silicious soils to retain manure and moisture for the use of plants, and make it a desirable soil for the growing of all green crops.

The experiments of sub-soiling which have come to my knowledge, have not enabled me to form any definite opinion of its effects. In Mr. Colman's last Report of European Agriculture, he gives the result of certain experiments in sub-soiling upon a stiff clay soil. One distinguished farmer says, "Until there is an escape for the water through the sub-soil, any opening of it but provides a greater space for holding water, and will rather tend to injure than improve the soil." Other good cultivators complain of its being ineffectual

"from the soil being too adhesive and heavy, and soon running together." Another says, "he expected from the complete breaking up of the sub-soil, that the parts would have remained distinct for years, but such was not the case. They all had ran together, and were as compact as when first moved by the plough." It seems that the English agriculturists agree, that on an adhesive soil, sub-soiling is not recommended until after a thorough draining, but that all shallow soils of the lighter kinds will be improved by it.

Although I place great reliance in the experiments in English agriculture, the difference in the climate and soil, should not be overlooked. One great object in all their cultivation is to drain off excessive moisture. Ours on high lands, particularly, should be to guard against excessive drought. One of their cultivators says, "sub-soiling provides a greater space for holding water." That may be just what we want.

I have used a sub-soil plough for two years: I thought last year, the land sub-soiled and in corn, stood the drought better than that not sub-soiled. On the grain crop this year, I could perceive no difference. I have sub-soiled for a crop of corn for fodder, last year, and planted it with potatoes this. I have also sub-soiled about six acres of moist stiff land from which no crop has been taken. Further experiments, I trust, will be made, and I should like to know the effect of a shallow-surface furrow upon a deep sub-soil furrow. It has occurred to me, that the principal benefit to be derived from sub-soiling, will be in keeping the surface mellow and porous, thereby enabling the sub-soil to retain moisture to be imparted to the surface soil, as the exigencies of the plants may require; and if this should prove to be so, whether a more shallow-surface ploughing would not furnish the crop with vegetable mould equal to its want. If this is settled, then the surface-soil may be made richer. The same manure incorporated with four inches of mould, that now is with six or seven, would make a material difference with the crops. Judge Buel, on his lands near Albany, found four-inch-ploughing deep enough to give the best crop he could obtain from those lands. I speak with no certainty on this point: I have succeeded best with deep-ploughing, but I know of no reason why the sub-soil plough should not obviate the necessity of a deep-surface-ploughing, if a shoal surface of rich mould will perfect the plants better than a deeper one less rich; and provided also, that the loss, if any, by evaporation, is equal in both cases.

In this may be involved the question, whether atmospheric air is taken up by the soil and communicated to the plant through the medium of the roots, or whether the leaves alone are the medium of deriving nourishment from the air. These questions may be immaterial to the farmer, as it regards his crop, but may not be as it regards cultivation.

One thing seems settled, that a soil rich by nature or art, is more productive than a poor one; showing pretty clearly that nourishment is drawn from the earth, by the roots, or the leaves catch it, as it escapes in the form of gas. A mellow soil may be favorable to either supposition; by the one, the gasses may the more readily escape, and by the other, the roots more readily feed it out. Whichever of these propositions you may undertake to defend, it seems to me a portion at least of the manure, when practicable, should be put under the soil. For if the whole of vegetation depends upon the leaves feeding on evaporation, if the whole of the manure is left on the surface, it must soon be expended; and suppose evaporation is no agent to give off support to the leaves, then before the rains or the absorbing power of the soil draws down the manure, the plant will suffer. What but a thorough knowledge on this subject, can determine when and how the manure should be applied? To collect, preserve and apply manures, is one of the grand means to ensure successful cultivation.

A barn-cellar under the stalls, is the best store-house—not so much because it preserves the solid manure during the winter from loss by evaporation in heaps, but because it saves all the liquid. The comparison made by the use of dung from the heaps exposed to the weather, and that from cellars, has led many to infer that the cellar improves the quality of the manure one half; when, as I believe, never one half of the fertilizing qualities of the excrements from the animals, ever went out of the stalls to the manure-heap. Where the floors are open, most of the liquid goes through them and is lost, when by a cellar, all goes among the solid manure and is saved. In cases where the solids will absorb the liquids during the winter, I conceive there is no benefit derived in adding soil to it before applying it to the land in the spring, unless that soil would of itself improve the land to which the manure-heap is to be added, or unless the dung is constantly kept covered a sufficient depth to prevent the escape of its valuable qualities. None of the strongest advocates for compost,

go to the trouble of covering the dung-heap daily with dirt in the winter season. Where cows are yarded in summer, as in the case of most farms, a good coating of some porous substance that will absorb all the droppings from the stock, is perhaps the best means to preserve a good supply of compost for top-dressing low grass-lands in the fall, or to lay over for spring use. Frequent additions are perhaps preferable to a deep bed at any one time, and a thorough ploughing before a rain is serviceable. But where the cattle-stalls are placed over a cellar, or where there are conductors to drain off the liquid droppings to a cistern, putting the stock in the stalls is unquestionably the best mode to save the manure.

I will give you the result of my observations on the best mode of applying manure, in order that those more experienced may show a better method. It is to draw all the winter-dung (made by the cattle,) upon grass-land about to be ploughed for a hoed crop; about twenty loads to the acre. I would delay moving it to the land, as late as is prudent, to give time to plough it under before planting-time. I would spread it no faster than to keep ahead of the plough. I should prefer to plough one day, and plant the next. The later you plough, the more green herbage is there to unite with the dung and produce decomposition. I would then spread a light coat upon the furrow, of six or eight loads per acre, of muck drawn to the yard the previous fall, which had absorbed the liquids in the yard. This method I have found, with a hand-full of ashes to the hill after the corn was up, would produce a good crop. The sward is not disturbed until the following spring. It is then ploughed deep enough to turn up the sod, the manure, and an inch or two of the soil below. It is sowed with small grain and grass seed, as early as the season will permit, with a bushel or two of lime or ashes per acre. Land broke up late in the spring, will be more rotten than that broke the previous fall, after vegetation has ceased growing. This one manuring is all for a crop of corn, grain, and four crops of hay. I never have succeeded well with a grain crop, where any manure was put, unless fully rotted. All the manure made in summer, is used as top-dressing for grass-land never planted, but ploughed up in the fall, and sowed down directly to grass. I have lands still lower which are never ploughed, where the scrapings from the gutters by the sides of the road, and other loam at command, are spread without any thing added to them. This is the substance of my manuring, save an acre

or two for corn to be fed green to the stock. This land, the following year, is in good condition for a root crop.

I have made some experiments with salt, lime, and plaster. For the three last years, I have used about a table-spoon-full of salt in the hills of corn and potatoes. I first used it to guard the seed from injury by the dung-worm. It kept off the worm to some extent, but not wholly—but I became confident it benefitted the crop. I tried it this year, on a small piece, in larger quantities, say a gill to a hill; the effect on the corn was, it did not vegetate,—the potato withstood it.*

I would not venture to say that salt will in any degree prevent the potato-rot, without further experiments. But I can say that last year at digging-time, not a rotten potato was found where I used salt, and but a few were affected with the dry-rot during the winter. The kinds were Long Reds, Chenango, a blue potato,—seed obtained from Madawaska—and the Lady Fingers. Not an unsound potato has been found in digging for family use, the whole season. The crop has not been taken up, thinking they may still prove defective. If they are to rot, I had rather it would be where they are, than in the cellar. From what I have seen, I think early-digging is no safeguard against rot in potatoes, unless it is on land flooded with water, and there they always rotted. I have read a great deal that has been written on the disease in the potato, if it is to be call-

* To show you that the using of salt as manure, is no new idea, I quote from a writer in the reign of James the first, by the name of Markham, who lived more than two centuries ago. The following sentence is in Markham's Farewell to Husbandry:—

"If you be neere unto any part of the sea-coast, thence fetch great store of the salt land, and with it cover your ground which hath been formerly plowed and hacked, and allowing unto every acre of ground three score or four score full bushels of sand which is a verry good and competent proportion, and this sand thus laid shall be verry well spread and mixed among the other broken earth. And herein is to be noted that not any other sand but the salt is good or available for this purpose. Now methinks I hear it objected that if the ground do lie so far within the land that there is no salt sand within many score miles of it, how then shall I make good my barren earth. I answer, that albeit this salt sand be of infinite good and necessary use, inriching grounds wonderfully much—If your land be far from the sea, then to every acre of land you shall take two bushels of verry dry bay salt, and in such manner as you sow your wheat you shall sow this salt; and after you sow your salt you shall sow your wheat, which wheat would be thus prepared before you sow it. The day before you are to sow your grain, you shall take bay salt and water and make a brine that will bear an egg—then put the wheat you are to sow into the brine and let it steep therein untill the next day; then drain it from the brine and so sow it, and no doubt but you will find a marvellous great increase thereby. Neither is the thing itself without good and strong probability of much increase and stength for the bettering of all manner of arable lands."

ed one, and I knew just as much of the cause and its remedy, before reading at all, as I now do. It is to me all in the dark, like the disease in the buttonwood. That tree seems to be recovering; may we not hope that the rot in the potato will disappear? I have tried lime and plaster with good and bad success. I have hardly supposed them manures that acted upon the soils, of themselves, but rather attracted from the atmosphere fertility, and let vegetation feed it off. And whether its various success is owing to the obstinacy of the one to receive, and of the other to accept of bounty, or whether their favors are bestowed only under a combination of circumstances not always existing, is to me unknown. I used plaster one year freely upon a potato field, without any manure. The next year, it was sowed with wheat, with a liming of three casks to the acre, and grass seed sowed. A fair crop of potatoes and wheat, and two good crops of hay were taken off. I then sold the lot. The plaster or lime, or both, must have helped these crops. I have sowed plaster upon alternate rows in a potato field; the vines plastered will keep green the longest. On some pastures it will improve the feed, on others, not at all. I have some doubts whether lime and dung should be used the same year, unless the dung is ploughed in, and the lime sowed on the top. I have no scruples in using plaster with dung. I do not understand how these minerals affect vegetation—but that they do, I have no doubt, under certain circumstances; and although these circumstances seem to be accidental, I do not suppose they are. We still hope that learning and experiments will make it all plain. Experiments may be considered as the raw material, for science to work upon. The agricultural newspapers treat more or less on the subject of manuring; and also agricultural encyclopedias. There are also treatises by Dana and Falkner, and another by Bommer, for which he has secured a patent. All farmers will obtain valuable information by a perusal of these works.

The Bommer method is a very expeditious mode of making manure. He gives assurance that a ton of dry straw, with about half a ton of other ingredients, such as lime, soot, ashes, plaster, salt, night soil, &c., will make four tons of manure. Of course two and a half tons of water must be added. I will not weary your patience in going further into detail, in making this manure. If the manure when made possesses the fertility his book purports, it must be valuable in a grain-growing country. But it may be doubted whether it

would be profitable here, to use up the straw, as few farmers raise more than can be profitably used for bedding the stock; and as it becomes saturated with urine, let it go to the barn-cellar, and be incorporated with the manure-heap. He also gives assurance that by his process, manure can be made of weeds, green grass, mud, and other earths.

Upon the seaboard, the washings from the ocean furnish a substance which supplies the farmer with as much as he needs for all the purposes of absorption, and even more in many places, and in all probability, where this is used, salt would do no good, and might do harm. It is supposed by some, that it is the salt in the sea-manures, which is one great cause of its fertility. If this is so, it may account for the expediency of using a suitable quantity of salt, upon all lands in the interior.

I have dwelt thus long on the subject of manure, because I believe, as Timothy Pickering once said, it is "the all in all in farming." Without manure we can raise no crops, and without crops we can have no income. There is one other species of manure, that has become an article of commerce—I mean guano. Its effects have been powerful in certain cases, however difficult it may be to account for it—as it lies from year to year exposed to evaporation, and its accumulation, according to Humbolt, who visited the Islands in the Southern Ocean, is very slight for a few of the last centuries, however it may have been before. Dr. Dana, in his Muck Manual, says, "The composition of guano countenances the idea of its being the excrements of birds. Probably they belonged to that ancient flock, whose huge foot-marks have left their impress on the shores of an estuary, which has since become the sandstone of the Connecticut valley." Thus he accounts for the vast accumulation, by supposing that it is the droppings of a bird, enormous in size.

Rotation of crops is a subject so much talked of, that it needs no explanation, and its beneficial results are generally admitted. That corn is the best for the first crop in the course, where any animals are kept, I have no doubt. That this crop in some way derives support from the dung turned under the sod, experiments have proved clearly, and the land is left in good condition for the succeeding crop. I believe any given quantity of new dung will be of as much service to the second crop in a course of rotation, after laying under a crop of corn, as it would be, to lay over the year, composted with earth

of the like quality of the soil on which it may be used. The second, and after crops in the rotation, must depend in a great measure upon location and other circumstances. A portion of every crop-farm where there are cattle, should be a field of corn sowed broad-cast or in drills, for cutting green for the farm stock. No crop stands the drought like it, and it may be sowed so as to be at maturity at such time as the cattle need it most—say from the first of August to the last of September. About this season the pastures get dry, the fields have fruit and other crops that prevent the stock being put there, (and this I have thought on the whole fortunate) and I am certain there is no feed so economical as the corn crop. An acre will feed from five to ten or more head of grown cattle a month, according to soil and season, with as much as they will eat night and morning each day, with what they pick up in the pastures. If you doubt the value or expediency of growing this crop, in such quantities as your stock will eat, try it on some spot in your garden, after pulling up your green peas. A gentleman who resides in Cuba, lately told me, they grow there five crops a year, on the same spot, for stall-feeding. I had rather be without a pasture after July is passed, than without a field of corn to cut and come again to. This county is becoming so studded with villages, that large tracts must be used for vegetables, and the luxuries of life, which a dense population are ever eager to obtain. And whether these places grow up by individual enterprise, or through the medium of congregated wealth, it matters not to the cultivator of the soil, any further than the one furnishes a more permanent market than the other. To supply the demands of these growing villages and cities, in vegetables, in fruits, in the products of the dairy and poultry-yard, will be an object worthy the attention of all within a reasonable distance of these ready markets; and it must become a source of wealth to the surrounding country, if properly improved. Fight with corporate wealth as much as you will, it seems to me we all partake of its benefits, in the reduction of fare for transportation, and in the improved market for the productions of the soil, if no more, in all our populous places. If you fear these supposed monopolies, go to the city on the borders of a neighboring county, where corporations are numerous, and a host of rich men have congregated a portion of their wealth; or, I would rather say, look in all directions for five or ten miles before you get there, and then say, if the well-cultivated crops, and the thrift of the in-

habitants don't tell a short story;—that there is no mistake as to their beneficial influence. Accommodate your crops to meet the wants of the market by which you are surrounded, and a fair remuneration will attend your exertions.

The animals of a country will as a general thing be a fair criterion by which to judge of the state of its agriculture. Go through any district of country, and if you see the flocks and herds of good size and in good condition at every stopping-place, it is safe to infer that you are in a well-cultivated region. The turnip culture in England, has done much to improve her stock. A good supply of that root in addition to straw for winter food, will make two year-old cattle as good as threes of the same breed fed on straw only. In ordinary circumstances, probably the best way to improve stock, is to select the most perfect from breeds not much larger than your own farm will grow. As you improve the soil and the quality of fodder, the stock will increase in size. Animals accustomed to feed on rich pastures, and to have a full allowance of roots in winter, if taken from this feed and put upon poor pastures and poor hay, without roots in winter, will be far less profitable than the breeds not improved in size by generous feeding. The dealer in cows, who has taken them from cities or other places where they have been fed high, and put them upon ordinary food, is not disappointed, if from being good milkers they become ordinary cows. I would advise no man, however poor his keeping may be, to purchase animals that have been fed better than he intends feeding. Some imported stock has come into disrepute from this cause. Cattle large, possessing good qualities, and of a vigorous constitution while well fed, have become lean and feeble, for want of their accustomed nourishment, and their progeny have degenerated even below the inferior animals of other breeds. This should not operate to create prejudice against foreign breeds, but rather it should stimulate us to provide a more generous diet. I consider it an open question whether the importation of stock has done any thing by way of improving our animals. Men far better qualified than myself, have discussed this subject fully: their views have been spread liberally before the public, and I certainly do not expect to settle the differences between them; but at the suggestions of a few individuals, I will give you my ideas on this subject. At the first settlement of the country, the importations made were fair specimens of the stock of the mother country at that time, and until

the present century we have had few breeders who even attempted to establish any peculiarity in our horned cattle, either of color, form, or size. Most of the improvements made, were accidental, or the result of better feed and care. When improvement became a matter of consideration, it was attempted mainly by the introduction of foreign stock, and from that source, most of our improvements, if any, have been made. I believe one of the errors in breeding, in this country, has been the introduction of too large a race for general use—not too large, perhaps, for farms in the highest state of cultivation, but larger than the ordinary cultivation and manner of feeding would keep, where they were. Of course they have become degenerate stock.

But I believe the skill and capital that has been brought into action in England, to improve their stock, have turned to a good account, and that their improvements have gone beyond any made in this country, with what we call native stock. I also believe that with the same skill, and the same time, and the same capital, our own stock may be carried to a state of perfection, equal to any of theirs. Still, I can never look upon the fine form and noble size of the Durham, without considering him the most perfect of his kind that I have seen, and wishing that our feed was equal to his demands. But, as it is, I believe for the present, it is better to take the smaller breeds. The Ayershire and the Alderney are in high repute for the dairy, and the North Devon for oxen. These breeds seem to possess a uniformity of qualities, which is not the case with any of our cattle.

That we have had some cows equal to any of the above, may be true, but it seems accidental rather than hereditary. The progeny of our native stock is not so likely to inherit the good qualities of the parent as is the foreign breed, so far as I have observed. I suppose the difference in this respect between the imported breeds and ours, is the result of a long course of skilful breeding to perfect and render permanent certain qualities, which might have originally been accidental. The quality of the milk of the Alderney and Ayershire breeds, is almost uniformly rich, while there seems to be no uniformity about the quality of our native cows' milk. A few years ago, I made a little experiment to test the quality of the milk of sixteen cows. A gallon of each cow's milk was set by itself, and after standing twenty-four hours, the cream from each was churned by itself, and the quantity of butter ranged from three to eight ounces. Thus

you see, the quantity of milk is not the only subject to be attended to in a dairy stock.

I suppose I have already wearied your patience, and without adding any thing more I would recommend to all farmers to peruse the publications on farming and stock, within their reach. They will afford a fund of instruction and amusement for the leisure hours of the winter evenings, soon coming on, and I venture to say they will resume the labors of the coming spring, with more of system and better success, than on former years.

Perhaps it was one of the wisest sayings of any uninspired man, that "If the threatening that man should eat his bread by the sweat of his brow was designed as a curse, it was one tempered with the greatest mercy." No man or woman is too rich or too honorable to work. Not that every man must dig potatoes or every woman wash them; but to feel that you have something to do that must be done, is but the spice of life. Show an individual that has nothing to do, and you find one that will do almost anything to kill time. The daily laborer, if free, asks no pity from him. The curse upon the ground, that it should bring forth the thorn and the thistle, becomes an obsolete idea, where the blessings of industry have their full scope.

Go to yonder garden, and then say if the vegetables, the fruits and the flowers there are not equal to the spontaneous productions of the garden of Eden. The very effort to rear them has a powerful influence on the moral sense. Believe you that the tender hands that nurtured the flowers that have surrounded us to-day, would give forbidden fruit to the objects of their best affections? If we proceeded from a strange vine, I have no evidence that we are the degenerate plants.

I believe, in this country, mankind are growing more industrious and more virtuous, save where the blighting influence of an unpaid labor is destroying the energies of those who demand it, and do nothing themselves. It is to be hoped that the time will speedily come, when all will feel that the hands of the laborer, to be efficient, must be free.

# ORIGINAL HYMN,

WRITTEN FOR THE

## ANNIVERSARY OF THE ESSEX AGRICULTURAL SOCIETY,

By George Lunt, Esq.

---

Once more amid the harvest fields with autumn's stores imbrowned,
With flowers and fruits and golden grain in rich profusion crowned,
Behind our steps the summer fades, before us all appear
The hues that with their glory paint the closing time of year.

Once more we've seen the genial earth fling winter from her arms,
For us unfold her mighty heart and give us all her charms;
Once more we've met the summer's sun amid the blaze of June,
And gathered nature's bounties in beneath the harvest-moon.

The forest leaves of late so fresh, lie strewn and withered round,
The voices of the coming storm sweep o'er the naked ground,
The birds that filled the living air have spread their wonted wing,
Afar beneath another sky to seek another spring.

Yet though the circling seasons change and each resumes its reign,
Oh, not for this we grieve to see the year's departing train,
For hopes, that flushed the vernal hour, have found their rich reward,
And smiles should cheer the wintry hearth where plenty decks the board.

Like men we met the honest toils with every rising morn,
Like men we bore the fervid heat amid the bending corn,
And now with grateful hearts we come to bless the bounteous Power,
Whose goodness sent the ripening sun and poured the kindly shower.

And still to seek thy fostering hand and own thy constant care,
May we and ours to endless years thy glorious name declare;
Thine are our fields and flocks and herds and all that crowns our days,
And still to thee, Almighty Lord! eternal be the praise.

# REPORTS, &c.

## ON PLOUGHING WITH DOUBLE TEAMS.

The Committee on Ploughing with Double Teams (present—D. Adams of Newbury, A. T. Newhall of Lynnfield, J. Worcester of Ipswich, and J. H. Coggshall of Lynn) REPORT:

That twelve teams were entered,—nine of which engaged in the work. Lots were assigned as follows:

| | | |
|---|---|---|
| No. 1. | to Joseph Horton, | of Ipswich, |
| " 2. | to Daniel P. King, | of Danvers, |
| " 3. | to Jesse Curtis, Jr., | of Marblehead, |
| " 4. | to Davis Clark, | of Lynn, |
| " 5. | to Franklin Allen, | of Marblehead, |
| " 6. | to Edwin Upton, | of Salem, |
| " 7. | to John Newell, | of Lynn, |
| " 8. | to John G. Walcutt. | of Danvers, |
| " 9. | to Philip Marsh, | of Danvers. |

The land had been in grass about half a dozen years, was well swarded,—and in consequence of the extreme drought, was difficult to be operated on. The lots were about sixteen rods long, by thirty feet wide, containing about one-sixth of an acre each. The work was performed as follows, viz:

| | | | | |
|---|---|---|---|---|
| No. 1. | by 31 | furrows in | 48 | minutes. |
| " 2. | by 32 | " | 50 | " |
| " 3. | by 31 | " | 50 | " |
| " 4. | by 31 | " | 50 | " |
| " 5. | by 29 | " | 51 | " |
| " 6. | by 34 | " | 82 | " |
| " 7. | by 32 | " | 70 | " |
| " 8. | by 30 | " | 73 | " |
| " 9. | by 34 | " | 46 | " |

All the teams were required to plough at least 7 inches deep. The average width of the furrows was a little more than twelve inches, and the average time of performance about one hour. This was a longer time than has usually been taken; in consequence of the work being much harder. All the teams performed well—some of them very well indeed. All the ploughs used, we believe, were made by Ruggles & Co., of Worcester. Nearly all of them were in good condition. Several of them were marked Eagle No. 25. These were spoken of as the best finished, and combining the latest improvements. Attached to several of these ploughs, we noticed a *draft rod* regulated by a *dial-clevis* at the end of the beam; by the aid of which, it is said, the ploughman can readily adapt the plough to any required *width* or *depth* of furrow. And by the combined operation of these, can so run his plough along aside of a fence as to turn the sod close by it; or can turn up meadow or soft land, with both cattle treading on the unbroken surface. These are decidedly useful operations. We have no fancy for the *strip, two or three feet wide*, as we have sometimes seen, left under the wall for the growth of briars and bushes. And if the plough can be made to turn it, it will save much labor with the breaking up hoe. The mould-board of plough No. 25 is somewhat varied from that of Eagle No. 3 and 4, (which we have considered a near approximation to the perfection of plough-making) so that "it takes a wider and deeper furrow without increasing the draft." The dial clevis, as we learn from those who have used it, is thought to be a valuable appendage to the plough. We have been more particular in noticing these alterations, as we have ever considered *the bringing into use ploughs of improved construction*, and thereby introducing them to the public, *one of the principal benefits accruing from these ploughing matches.*

We have sometimes queried, whether all our ploughing could not be more advantageously done with one yoke of oxen. But in the condition in which this land was, we are satisfied that it required at least the power of two pair of cattle. It is not useful at a Ploughing Match to attempt a display of work, such as a good farmer would not approve on his own farm. What we want is, that kind of work which would be most valuable, when applied upon the same kind of land, in the ordinary process of cultivation.

The inquiry has sometimes been made, upon what principles are the premiums awarded? It is not easy to specify any definite rules,

where a combination of all the facts and circumstances should be taken into view. The man who completes his work in the *shortest time*, inquires, why the *time* is noted, if when the work is so done, it is not to command the premium. The man who cuts his furrow true and lays it uniform, without hurrying or agitation, thinks that he has complied with the instructions of the committee, and is entitled to reward. And so he has, if the work has been done with a reasonable degree of *energy* and *activity*. In judging of ploughing, we think it proper to notice, the form of the plough used; the condition of the cattle; the manner in which they work; the skill with which the plough is handled; the size and position of the furrow slice; and combining the considerations connected with each and all these points of view, without attaching undue importance to any one of them; to approve of that work as best, which would be most worthy of imitation on a farm. The practised eye will readily discover many things in the movements, for which no definite directions can be given. Very much depends upon the manner in which the cattle have been disciplined; and the vigilant attention of the person holding the plough. An inexperienced hand can hardly expect to enter into successful competition.

The Committee were gratified to meet on the field several experienced ploughmen whom they have heretofore met; as also several young men, who manifested a determination to merit premiums. We know of no contest for victory less liable to objection than this; we know not how the young man can better recommend himself to the farmer, than by showing, in the field, his skill in handling the plough.

We recommend that the premiums be awarded as follows:

| | | | | |
|---|---|---|---|---|
| To lot No. | 2. | first premium, | $10.—D. P. King. |
| " " | 6. | second " | 8.—E. Upton. |
| " " | 9. | third " | 6.—P. Marsh. |
| " " | 8. | fourth " | 4.—J. G. Walcutt. |

By order of the Committee,

J. W. PROCTOR.

Lynn, October 1st, 1846.

## ON PLOUGHING WITH SINGLE TEAMS,

The Committee on Ploughing with Single Teams, REPORT:

That there were six entries, five of which appeared as competitors for the premiums, viz:

Moses Pettingill, of Topsfield.
Jacob P. Goodale, of Danvers.
Nathaniel Felton, of "
Joseph C. Putnam, of "
Farnham Spofford, of Andover.

Quantity of land ploughed by each team, about one-sixth of an acre.

Messrs. Pettingill, Putnam and Goodale finished their work in from 39 to 40 minutes, Mr. Spofford in 51 minutes, and Mr. Felton in 69 minutes.

The ploughs used were all from the establishment of Ruggles, Nourse & Mason; and all, with one exception, did the manufacturers great credit, by showing the perfection with which their ploughs can be made to turn the sward. The plough to which the exception is made was for the want of having it properly adjusted in running to land, by the ploughman, rather than for any defect in its structure. One of the ploughs used had an iron beam. This beam was cast more sweeping than the wooden beams, and left more depth under the beam by the coulter, being therefore less liable to clog. The Committee had not time to examine this plough sufficiently, as to its weight, its cost and its strength, to enable them to decide with any certainty whether this alteration is an improvement, neither do they wish to intimate that it is not an improvement.* They witnessed an alteration in the iron fastening on the end of the beam, called by the maker a dial-clevis, which they consider an improvement, as the plough, by this fixture, can be turned to and from the land in smaller proportions than by any method heretofore in use.

The ploughing field was a sandy loam. One end of some of the lands was very uneven; the land was exceedingly dry, and could not be laid so smooth as if it had been lately moistened: but under all the circumstances, the work was performed admirably. The teams with one exception, went straight and spry, with very little forcing.

* We expected an interview with the manufacturers and to have examined this plough fully, but other appointments prevented it.

The furrows were well shut in and well turned. And the Committee found a good deal of difficulty in determining how to award the several premiums.

After a thorough examination of the lots after the teams left, and a long consultation, they awarded the premiums as follows:

| | | | |
|---|---|---|---|
| To Joseph C. Putnam, of Danvers, | 1st | premium, | $8. |
| To Moses Pettingill, of Topsfield, | 2d | " | 6. |
| To Jacob P. Goodale, of Danvers, | 3d | " | 4. |
| To Farnham Spofford, of Andover, | 4th | " | 2. |

In behalf of the Committee,

MOSES NEWELL.

Lynn, October 1st, 1846.

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## ON PLOUGHING WITH HORSE TEAMS.

The Committee on Ploughing with Horse Teams ask leave to REPORT:

That there were four horse teams entered for premiums, viz:

One by Philip Strong, of Marblehead.
" Jacob Brown, of Ipswich.
" Seth Holden, of Salem.
" C. A. Stetson, of Lynn.

Each appeared on the field and ploughed the usual quantity of land on such occasions, viz:

| | | | | | |
|---|---|---|---|---|---|
| Jacob Brown, of Ipswich, | ploughed | 28 | furrows, | in 35 | minutes. |
| Philip Strong, of Marblehead, | " | 28 | " | 43 | " |
| Seth Holden, of Salem, | " | 28 | " | 43 | " |
| C. A. Stetson, of Lynn, | " | 28 | " | 45 | " |

J. J. Punch, ploughman.

Your Committee, after carefully examining the different teams, their discipline, and the workmanship of the ploughing, recommend premiums to be awarded as follows, viz:

| | | | |
|---|---|---|---|
| To Jacob Brown, of Ipswich, | 1st | premium, | $8. |
| To C. A. Stetson, of Lynn, | 2d | " | 6. |
| To Seth Holden, of Salem, | 3d | " | 4. |

Your Committee regret their not being able to award a premium to Mr. Strong, as all the teams did their work well enough to deserve one.

Respectfully submitted,

JEREMIAH COLEMAN,
S. C. PITMAN,
SETH KIMBALL,
FREDERIC MITCHELL,
JOHN NORTHEND.

Lynn, October 1st, 1846.

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## ON SWINE.

The Committee on Swine Report:

That but few animals of this description were exhibited, and that none of them came within the rules of the Society, so as to be entitled to a premium. The Society offers premiums for boars, breeding sows, and litters of weaned pigs, of not less than four in number, from four to six months old. Six swine were entered by Elias Clough, of the Lynn Poor Farm, which were purchased from a drove ten months since, and were probably over a year old at the time of exhibition. They were well-proportioned, thrifty animals, and would weigh over 400 lbs. each. A finer lot could not, perhaps, be produced from any pen in the county; but though of one litter, they were not a litter of weaned pigs less than six months old. Joseph Horton, of Ipswich, presented a plump pig, nearly four months old, which should have been accompanied by at least three mates, in order to claim the Society's premium. A very fat Berkshire hog, weighing 525 lbs., was exhibited by Nathaniel G. Harris, of Lynn, which commended himself to the favorable opinion of the Committee, in all respects save his breed, but for which they had no authority to bestow a premium, as the Society offers none for a fat hog, as such. Four Leicester pigs, and a sow and a boar of the same breed, were entered for exhibition only, by Samuel C. Pitman, of Lynn, of which the two latter were thrifty and handsome animals.

The Committee were at a loss to account for the comparatively

small number of swine offered at this, and the late exhibitions of the Society for its premiums. Essex is confessedly not a grazing county, and hence it is that few cattle are fatted for the shambles, and few such present themselves at our shows. But of swine a large amount is fatted and raised among us. There is hardly any neighborhood in our villages, but could present many such as would do credit to any exhibition. Our premiums seem to be offered rather with a view to encourage the breeding of swine, than the fattening of them; but to that object, as your Committee believe, the attention of our farmers is not at present specially directed. Many of them purchase their store pigs from the droves; some have no belief in the superiority of one breed over another; and others are deterred from keeping sows for breeding, by the risk and uncertainty attending it. Perhaps too, from the low price of pork for the last few years, less interest is taken in procuring valuable breeds of swine, and propagating from them, than would otherwise be.

Your Committee would be slow to subscribe to the opinion that it is best to purchase from a drove, where a large number of swine is kept. The most practised eye is often deceived as to the appearance of swine, and the first cost of those selected might often, with the best of feed, be hardly doubled in six months. We believe there is a great difference in the breeds of swine; that some lay on fat as fast again as others, with the same feeding. Some seem to have no other ambition than to increase in weight, and to rejoice the heart of the farmer; whilst others seem determined to balk his efforts and hopes, by either eating with a dainty appetite, or, if devouring food with a seeming relish, making no good use of it after it has passed from the stomach, except to increase the contents of the hog-pen.

With regard to breeds,—the Berkshire, which but a few years since put forth the loftiest pretensions to public favor, is now generally condemned by those who have kept and slaughtered them. In England, where swine meat is used more as other meat is than with us, and where it is consequently desirable to have a considerable portion of it lean, the Berkshires are held in high repute. A Yankee, however, looks first and foremost to a hog for pork, as a relish and as fat. But for furnishing this, the Berkshire breed of swine is among the very worst that exists. The fat pork of an entire Berkshire hog that weighs 350 or 400 lbs., is about two inches in thickness, and about a half an inch of that is rind. It is very soft and does not cool

hard like good pork. The legs and shoulders are very weighty, as are also the spare-ribs and loins.

Your Committee are not sufficiently acquainted with the different varieties of swine to distinguish them by their names and qualities, so as to give a preference to any particular breed. It is indeed difficult to know what to call the best breed, as they are so crossed and intermixed, as they are to be seen among us. In selecting swine, we should not take a pig with a large head, large ears, large legs and a large tail; but if we wanted a pig of which to make a hog, we should endeavor to procure one that had a short head and small ears, fine legs, and a slim tail set upon a slope rump. We should then have pork and not bones. At slaughtering, the latter pig, which to appearance would weigh 300 lbs., will be found to weigh 350 or more; the former will apparently weigh 400 lbs., but when brought to the balance he will be found wanting.

There is unquestionably greater risk attending the breeding of swine than any other farm stock. But there are some rules, which, though perhaps generally known, if more rigidly observed, would diminish the chances of a loss of pigs at littering. The sow should be placed by herself in a pen, sparingly supplied with fine litter, some weeks before confinement, so that she may become accustomed to her abode. On the eve of that event she should not be disturbed, nor indeed until after she has begun to suckle all of her new-born family. She should be fed lightly for some days after having littered, to allay inflamation and to promote a healthy tone of body and appetite. The quantity and quality of food may be increased, as the demands of her stomach, which will soon be great, increase. But should her appetite be poor—should she be moping or enfeebled by littering, let her out of the pen with her young ones, to follow her own bent; to walk, or root, or lie down, when and where she pleases; only housing her at night.

In a fortnight from their birth, pigs will thrive all the better for being allowed to run out, at liberty, from the pen, and, as soon as they may, to eat grass, crumbs and such other food as they can find. In a few weeks more they will readily eat corn, which should be furnished them in small quantities as soon as they will eat it. They thus learn early the art of eating, and depend partly on it as well as on sucking, for support. The change, therefore, on weaning is not a violent, but an easy one. They are thus preserved from that weaken-

ing and often fatal malady of young weaned pigs, the scours. This and the mange are, perhaps, the most frequent and obstinate diseases to which weaned pigs are liable. For the former, we know of no remedy but the largest liberty and the smallest allowance of food; for the latter, washing the pigs with butter-milk, or a sprinkling of lamp-oil on their backs, will be found to be very beneficial, in removing the distemper.

In feeding swine, care in providing their food, regularity in furnishing it, and judgment as to the amount furnished at particular times, are all important. A hog, it is said, will eat any kind of food, if he be kept short enough. Perhaps he will. And yet the object of the feeder should be, not to see how mean or filthy fare a hog will put up with without grumbling, but what food he will consume the most of from day to day, which will best promote his growth and at the same time be cheapest provided. And here is a wider field, and one containing more disputed landmarks, than we can fully enter upon or settle. By some it is contended that raw food, of every description, is better than cooked; others, and they comprise the larger class, say that solid food for swine is more nutritious for being cooked. Our own testimony would go strongly in favor of cooked food, and some of us are of opinion that if it be fermented it is all the better. Indeed, apples, sour or sweet, if boiled and mixed with meal, are not only eagerly eaten by swine, but are nearly as promotive of their growth as potatoes boiled and mashed with meal. We have no question that it is the best use to which cider apples can be appropriated. Some think that the wash of a dairy is almost indispensable to the raising of pork; and doubtless it is an important item in lessening the expense of it: while others assert that hogs will take on flesh fastest when fed solely on corn and cold water.

But if these and other points as to the kinds of food best adapted to the fattening of swine, are disputed, all are agreed that regularity in furnishing the food is of the utmost consequence. A hog will tell the hour of the day, by his stomach, with great exactness. If it be feeding time and his wants be unsupplied, he will squeal, and fret, (who can blame him?) and worry off flesh faster than it can be put on by a flush of food at irregular hours. Swine should, therefore, as a general thing, be taken care of by one and the same person. If they be intrusted to a number of hands, the old adage, "What is everybody's business is nobody's," will be too often verified, in their

attendance. With three meals a day in summer, and two in winter, we believe our swine are very well content.

Judgment should be exercised in feeding; for this some head-work as well as hand-work is needed. If the previous meal or a portion of it be left in the trough, it is evident either that the swine have been over-fed, or have lost their appetite. In either case, diminish or withhold entirely their food at the next regular meal-time, and perhaps the next, and the next, until the quantity furnished at any one time be completely consumed. A clean trough is a great restorative for a lost appetite. A hog can eat without a table-cloth, but he likes a clean plate,—or what is the same thing to him, a clean trough,—as well as he who feeds him. Swine should not be surfeited, if you would have them eat with a keen appetite. Gorge them to-day, and to-morrow they are shy and dainty feeders. The operation of fattening is a gradual one, but it is also the quickest and cheapest performed when the fullest amount of material needful to it, is furnished. If it be true, as some physiologists assert, that plants live mainly on air, it is very certain that swine cannot thrive on any such food. They need good food and a plenty of it. They cannot be cheated out of it, either by avarice or philosophy, without being cheated yourself.

In reference to the often disputed question, whether pork-raising is a profitable part of our farm pursuits, much, of course, depends on the relative price of pork and of the food necessary to make it. At the present price of corn and pork, it is contended by some that all the profit in keeping hogs, is in the manure made by them. This may be true if all the food is to be bought for them, but there is a large amount of valuable materials on almost every farm, such as skim-milk, small potatoes, wind-fall and other unsalable apples, unsound and small ears of corn, which, we believe, can be applied in no way more profitable than in the feeding of swine. And as many such articles go to make a given amount of pork, it is difficult to arrive at the exact cost of fattening it. But if you have to buy all the food for your swine, corn is probably the most profitable; and it is believed by your Committee, that pork can be raised for six cents a pound on corn when it is sixty cents per bushel, at seven cents a pound when it is seventy cents per bushel, and so on, either way, one cent a pound on the pork, and ten cents a bushel on the corn. And this conclusion is drawn from the fact that a good thrifty hog that will

eat four quarts of corn a day, will gain a pound and a half of pork a day.

To promote the growth of swine, they should be well littered, so as to have a clean bed, and their pen should be kept dry, though not too close. In winter, it is more difficult to make them grow than in mild weather, and one cause of this, as your Committee believe, is, that they are then often kept too warm in their pens, so that on going out, their perspiration is checked, and their health consequently injured. Whether hogs are fatted in summer or winter, let the eye of watchfulness be always upon them, and the liberal hand extended to supply their wants at regular hours, and then—if at all—the business will be made a remunerating one.

Respectfully submitted,

ALLEN W. DODGE,
HOBART CLARK,
JOHN ALLEY, 3d,
JOSEPH AKERMAN,
MATTHEW H. GREENLEAF.

Lynn, October 1st, 1846.

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## ON MEADOW AND SWAMP LAND.

*Committee*—J. Newhall, J. Marland, T. E. Payson, J. M. Grosvenor, H. Ware, Jr.

The Committee on Meadow and Swamp Land REPORT:

That early in July, their attention was called by Mr. James Marsh, of Danvers, to one acre of reclaimed meadow land, for premium. The Committee inspected the meadow while the crop of grass was standing, which in their estimation would produce two and a half tons of hay. The crop of hay, the year previous, amounted to three tons, as per statement of Mr. Marsh, which is subjoined. The Committee award to him the first premium of fifteen dollars.

It affords pleasure to the Committee to remark that the attention of the farmers of Essex is becoming more strongly directed to the subject of reclaiming those numerous tracts of meadow and swamp

land with which the county abounds. As Mr. Marsh very truly observes, there is no labor done on a farm, that yields a more certain return, than that bestowed on low and wet ground. The crops of much of the light land under cultivation, are frequently injured by the severity of our summer droughts, while the low lands, if judiciously drained, produce largely whether the season proves to be dry or otherwise.

The fact being now well established that peat meadows, after having been reclaimed, are among the most valuable and productive of cultivated ground, the question arises, What, from past experience, is the best method to be pursued in reclaiming such land? The meadow or swamp of Mr. Marsh was dug over, and the stumps thrown out, at an expense of twenty dollars; then covered with gravel and sown down to grass. But on many tracts of peat meadow which are free from bushes and trees, the expense of inverting the sod may be entirely saved. From the experience of one of the Committee at least, the most economical course to be pursued, and that which gives the greatest return for the outlay, is, after draining by marginal and other ditches, to haul on in the winter, (if the meadow be soft,) about one hundred and fifty loads of gravel to the acre, spread in July following; and early in September, after having put on some compost or ashes, seed down to grass. Meadows reclaimed in this way, have continued to produce good crops longer without top dressing, than similar land which had been planted till the turf was subdued, and then sown down without any admixture of sand or gravel. The inquiry is sometimes made, Of what benefit can mere sand or gravel be to such land? It is well known that meadows which are submerged during a great portion of the year, contain acids which are deleterious to cultivated plants. In order to induce fertility, such acid must be corrected. It is said by chemists that every hundred lbs. of granite contains six or seven lbs. of potash; this alkali is abstracted by the peat from gravel, when applied to such land, and the peat becomes a bed of manure. It is necessary also to warm and consolidate the meadow and to afford silex for the coating, and thereby give support to the growing plant. Hence the great value of a certain amount of coarse gravel in the process of reclaiming peat meadows.

In September, the Committee, at the request of Mr. Samuel C. Pitman, of Lynn, viewed a piece of land on his farm, containing

about ten acres, which he has improved by clearing the bushes, trees and stumps, and rendered productive of good crops, as will be seen by his statement, which is herewith transmitted. The ground appeared to be more of the character of upland than otherwise, and it was thought that the improvement did not come within the province of a committee on wet meadow and swamp land. The method of extracting stumps, adopted by Mr. Pitman, seems to be worthy of attention.

The Committee have received an interesting communication from the Rev. Edwin M. Stone, of Beverly, on the subject of reclaiming meadow and swamp lands, which the Committee respectfully request may accompany their report, and be published in the Transactions of the Society.

For the Committee,

J. NEWHALL.

Lynnfield, November 1st, 1846.

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JAMES MARSH'S STATEMENT.

*To the Committee on Meadow and Swamp Land:*

GENTLEMEN,—The piece of reclaimed meadow, to which I ask the attention of the Committee, contains about four acres. A few years since, it was considered worthless, not having been mowed for many years, and then but a small part, for litter. About half was covered with bushes and stunted maples. About six years since, I commenced reclaiming, by inverting about six rods and spreading a light dressing of compost manure, and sowed grass-seed about the last of May: this exceeded my most sanguine expectations, both in the quantity and quality of the hay to the present time. The next year, I ploughed half an acre of the hardest part, by attaching a plough to a pair of wheels, so that the oxen might walk on the sward. This I planted with potatoes; and after they were dug, the ground was leveled and prepared for grass, which was sown on the snow in March. The piece of land to which I would ask your attention, contains one acre. In the winter of 1839, I cleared the wood and bushes, and have since kept the sprouts down by mowing. In August, 1843, I hired

it dug over and laid level, (the stumps and hassocks thrown back) for twenty dollars. Such of the roots and hassocks as became dry, I burned; the others were carted home for fuel, when the meadow became frozen. The fuel paid for this part of the labor. I then covered it with a loamy gravel one inch, which took one hundred and fifty loads; which took five days' labor of two men and two yoke of oxen. The work was done in winter, when there was two feet of snow on the ground, too deep for other labor. I then applied a light dressing of manure, and sowed the grass-seed April 15. The crop was cut, the first year, about the last of August, and yielded one and a half tons, worth $15 per ton; the second year, three tons of prime quality, worth $20 per ton: the present season, two and a half tons, worth $15 per ton. The expenses, as near as I can estimate, are as follows:

| | |
|---|---|
| Turning, | $20 00 |
| Gravelling, | 10 00 |
| Manure, | 10 00 |
| Grass-seed—one peck herds, one bushel red-top. | 1 50 |
| | 41 50 |
| Crops—First year, 1½ tons, at $15, | 22 50 |
| Second " 3 " 20, | 60 00 |
| Third " 2½ " 15, | 37 50 |
| | 120 00 |
| Deduct for cutting and making, $2 per ton, | 14 00 |
| | 106 00 |

Yours, respectfully,

JAMES MARSH.

Danvers, October 1st, 1846.

P. S. I have been improving my low grounds for fifteen years, and have more than quadrupled my crop of English hay. I know of no labor that yields a more certain return. I think (where the ground is not too rough) inverting the sod and spreading a light coat of gravel, manuring and seeding down to grass, yield much the greatest profit for the labor. J. M.

## EDWIN M. STONE'S LETTER.

*To the Committee on Meadow and Swamp Land:*

GENTLEMEN,—If, in your judgment, it comports with the objects of the Essex Agricultural Society, I should like, through you, to urge, briefly, upon the attention of farmers, a subject which, for several years, has been one of increasing interest to me, and constituting, in my view, a most important department of agriculture. I mean the *reclaiming of meadow and swamp land.*

At what time attention was first drawn to this subject in Essex County, I am without means of determining; but it is now something more than forty years since the late Benj. T. Reed, Esq., of Marblehead, tested the utility of reclaiming wet lands by ditching, covering with gravel, &c. He owned four or five acres of this kind of land, that produced grass of so poor quality as to be hardly worth mowing. This same land, after being drained and suitably prepared, yielded from three to four tons of good hay per acre. Mr. Reed's experiment attracted attention, and doubtless was instrumental in promoting similar improvements elsewhere. Many years ago, the late Peter Dodge, of Hamilton, reclaimed a piece of meadow land with a success that won the admiration of his neighbors, and that induced others to engage in "*Peterizing*" their bogs, as the process was familiarly denominated. Since then, the practice has been extensively adopted.

This work has not, however, been pursued to the degree its importance warrants. There are still, in this county, thousands of acres of meadow and swamp land in their primitive state. This land, now comparatively worthless, would, if reclaimed, be highly valuable. I have in my mind at this moment, a tract for which the owner would not now accept one hundred dollars per acre, that a few years ago was worth not more than fifteen dollars. I believe no land remunerates labor so well. An occasional dressing of gravel or sand, to keep down the foul grasses, and a thin coating of manure once in three years, will, in common seasons, ensure an abundant crop of English hay.

While the value of such land, when reclaimed, is acknowledged by all, some farmers object to the improvement on the ground of expense. They say that the labor of reclamation costs so much, that they feel compelled to sacrifice their preferences at the shrine of prudence. But this objection loses its weight, when it is considered that farmers

may do most of this work within themselves, and at times when their teams are not required for other service. Besides, much of the swamp land in this county, has been, at a remote period, covered with a heavy growth of pine, and the fuel raised from beneath the surface, will, in most instances, remunerate the expense incurred. Such has been the fact in several cases in my own neighborhood. My neighbor, Mr. Sullivan Brown, who has this year raised a fine crop of corn and potatoes on land that two years ago was mere bog, informs me that the entire cost of reclaiming it has been defrayed by the wood obtained.

Another consideration by which I would urge this kind of improvement, is *Health*. If "time is money," so is health. The salubrity or insalubrity of a neighborhood or town will always affect the value of landed property. Whatever, therefore, renders a place more healthy, makes it more attractive for habitation, and consequently increases the value of real estate. This fact is worthy the attention of all, and especially of those inhabiting towns through which pass the *iron arteries* centering in Boston. The rapid growth of the Metropolis is every year impelling hundreds of its business men to seek homes for their families, during the summer months, in the country, and such will continue to be the case for many years to come. The facilities of railroads make it nearly as convenient for a merchant doing business on Long wharf to reside twenty or thirty miles in the country, as to live at the south or west ends of the city; and in selecting a residence, its healthiness will determine the choice.

Much of the summer sickness in the country, is attributable to an impure atmosphere produced by the miasma of meadows and swamps. Draining and culture will, of course, in all such cases, remove this cause of disease. This truth has been remarkably exemplified in the north parish in Beverly. Formerly, fevers and other forms of summer and autumnal disease, prevailed extensively every season. About twenty years ago, the reclaiming of meadows and swamps was commenced, and up to the present time, between thirty and forty acres have been converted into productive land. The effect has been wonderful. During ten years past, not a case of malignant fever has *originated* in those neighborhoods, formerly so sickly; and the parish has become one of the most healthy places in the State. Last year, but four deaths occurred in a population of about seven hundred—three infants and one adult aged 86 years. Indeed, there is not a spot in the Common-

wealth, that I can now more confidently recommend for a residence, on the score of salubrity. What has been effected *here*, may be effected elsewhere, by a similar process; and I respectfully submit to land owners in sickly neighborhoods, whether the work is not, in every point of view, worthy of more general prosecution.

Last year, in a report by the Society's Committee on Meadow and Swamp Land, a scientific and practical survey of the meadows of the county was recommended. Such a survey, thoroughly executed, would be highly advantageous to the farming interest, and reflect deserved credit on the Society.

Very respectfully,
Yours, &c.,

EDWIN M. STONE.

Beverly, September 30th, 1846.

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SAMUEL C. PITMAN'S STATEMENT.

*To the Committee on Meadow and Swamp Land:*

GENTLEMEN,—The swamp to which I have called your attention, is composed in part of muck and part of sandy clay soil, and contains ten acres and twelve rods. In the year 1839, the first year I came to live on the farm, and by the way, the first year of turning my attention to farming,—this land was so thickly covered with brush, brake and briars, that it was with great difficulty a man could walk through it. A few years previous to this, it contained a heavy growth of hard wood. In August, 1840, I had the brush and brake cut and burned. In June, 1841, I commenced pulling the stumps, which averaged, large and small, five hundred to the acre. One hired man with myself and one yoke of oxen, cleared about three acres in twenty days. The last part of summer and fall, I cleared, ditched and ploughed, the remainder. I would here state that I made use of a strong purchase—consisting of tackle and fall, to remove the stumps: I supposed my purchase with one yoke of oxen, would move one hundred tons. The expense of pulling the stumps, reckoning my own time at one dollar per day, and the oxen at fifty cents per day, I estimate to have been $175. In 1842, I planted about one half the land with corn and potatoes, and had a very fair crop of each.

The other part or half, was so full of brake-root, that I could not work it; in order to get rid of which, I let the land lay until after haying, when I gathered the brake-root into large heaps and burned them. In 1843, ploughed and planted part with potatoes, and sowed part with barley. In 1844, ploughed and sowed part with oats, which I cut for fodder. The other part I planted with potatoes. After getting off the oats in August, ploughed and sowed with herds grass and red top about six acres. In 1845, ploughed and sowed with oats three acres; planted one acre with potatoes, six acres being in grass; all this year bearing heavy crops. In August, ploughed and sowed with herds grass and red top the three acres which were in oats. The present year, 1846, ploughed and sowed with barley and grass seed one acre in April; cut in July, a heavy crop of barley. From the nine acres in grass, I think I can safely estimate an average of two tons good hay per acre. I have used very little manure on any part of it, and some parts nothing more than a light sprinkling of ashes when seeded down to grass.

The expense attending the whole improvement, over the usual labor on common tillage lands, I estimate thus:

| | |
|---|---|
| Cutting down brush, | $45 |
| Pulling stumps, | 175 |
| Hauling off do., | 35 |
| Extra team and labor ploughing, | 40 |
| Expense of apparatus for pulling stumps, | 30 |
| | $325 |

The amount of fuel obtained from the stumps, I calculate was worth to me all the expense of pulling them out, which, deduct 175 from 325, leaves 150 or $15 per acre. I certainly think the crop of hay last year, more than balanced the account between me and the swamp.

I will cheerfully explain the method I used in pulling the stumps, to any one wishing to try the experiment.

I have thus given you as correct and detailed a statement as my time at present will permit, and submit the same.

Respectfully,

SAMUEL C. PITMAN.

Woodside Farm, Lynn, September 14th, 1846.

## ON FARMS.

The Committee of the Essex Agricultural Society on Farms, (consisting of Moses Newell, Hobart Clark, Erastus Ware, Christopher How, and Jacob Brown,) REPORT:

That but one farm has been entered for premium. This was by Mr. Jonas Holt, of Andover, who made application for a premium the last year, and was awarded a gratuity only. A majority of the Committee examined this farm in July and September, and were more particular in their observations in regard to the management of the farm, than they probably would have been, had it not been examined by an able and experienced Committee, the year preceding. Your Committee concur in the remarks made by their predecessors, as to the character of this farm, and generally as to the improvement of it, and have but very little to add to what has heretofore been stated. Mr. Holt has done most of the work of his farm with his own hands. He has had good success in obtaining grass from his low peat land, where nothing grew before. He is cultivating the various kinds of fruit, such as apples, pears, peaches, cherries, grapes, &c., with a fair promise of success. This farm has been in the possession of the present proprietor's family from the first settlement of Andover, and it is believed that if some of his grandfathers could now take a peep at it, they would think considerable work had been done by somebody.

Your Committee are of opinion that Mr. Holt is entitled to much credit, for skill, perseverance and economy, in the management of his farm, and unanimously recommend the second premium of twenty dollars to be paid to him.

For further particulars in regard to this farm, reference is to be had to Mr. Holt's statement, which accompanies this report.

All which is respectfully submitted,
For the Committee, by

HOBART CLARK.

Andover, November 16th, 1846.

JONAS HOLT'S STATEMENT.

*To the Committee on Farms:*

GENTLEMEN,—During the last five years, I have subdued ten acres of rough bush pasture, which is very stony. I have built fifty rods of good stone wall, and have set one hundred and fifty trees this year, and have also ploughed five acres of my pasture, three of which I have sown with rye; the cost of which was as follows:

| | | | |
|---|---|---|---|
| Ploughing three and a half days, myself, oxen and boy; | | | |
| My own work, at $1 00 per day, | | | $3 50 |
| Oxen, | 1 00 | " | 3 50 |
| Plough, | 50 | " | 1 75 |
| Boy, | 50 | " | 1 75 |
| Four bushels of rye, at 90 cents per bushel, | | | 3 60 |
| Sowing and harrowing, | | | 4 00 |
| Making the whole expense, | | | $18 10 |

This is sown for early feed, and to subdue the bushes. The feed will not pay more than half the expense of ploughing and sowing, but bushes cannot be subdued without time, and it is better, I think, to get half pay than to let the ground lie fallow.

My crops, this year, are but partly harvested. I sowed one bushel and three pecks of barley, and harvested nineteen bushels and one peck from three quarters of an acre. Sowed three bushels of oats; these are not all threshed. Planted eight quarts of white beans; have harvested about two thirds of them, and have six bushels.

I have thirty-six acres in mowing and tillage. Five acres and one half have been tilled this year, viz: One and one half in corn, one and one half in potatoes, one acre of beans, and of corn for fodder; one do. fallow, which I have seeded, the first of September, with grass, and half an acre of trees.

I have made sixty loads of compost manure, this season, in the following manner: Heap No 1. Twenty loads of muck, twelve do. of loam dug up by the wall, six do. of barn yard manure, two do. of peat ashes. No. 2. Eight loads of muck, one cow that died, two loads of ashes, and four bushels of refuse or dirty salt. No. 3. Bushes and roots, with the gravel attached, burned; five loads. No. 4. Loam mixed with the wash of the sink: twenty loads of this I have used, and the other forty I intend to spread on the grass this fall. I have also the manure in the hog and barn yards, probably near fifty loads.

Since the sixth of April, I have hauled ninety loads of small stones, and blasted rocks four days. I have cut twenty-five tons of English hay, four or five tons of meadow hay, and two tons of rowen.

| | | |
|---|---|---|
| Expense of labor: | One man, 3 months, at $12 50, | $37 50 |
| | One man, 14 days, at 75 cents, | 10 50 |
| | One man, 10 days, at 80 cents, | 8 00 |
| | One man, 5 days, at $1, | 5 00 |
| | One boy, 14 days, | 3 50 |
| | | $64 50 |
| I have sold two loads of hay, one at 12, and the other at $15 per ton, amounting to | | 38 16 |
| Summer apples, peaches and vegetebles, | | 12 00 |
| | | $50 00 |

I have yet to sell, several tons of hay, and twenty barrels of apples, besides beans and garden vegetables.

A more full account of the produce of the farm can be given, when the corn and potatoes are harvested.*

Respectfully yours,

JAMES HOLT.

Andover, October 1st, 1846.

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## ON STEERS.

The Committee to examine and award the premiums on Steers, ask leave to REPORT:

That but one pair of steers was offered for premium; a pair of the Durham breed, two years old, by Benjamin Poore, from the Indian Hill Farm, West Newbury. They were large, well-formed, fine

* By letter of November 21st, 1846, from Mr. Holt, we learn that he raised eighty-three bushels of ears of corn from one acre, and one hundred and fifty bushels of potatoes on his farm, forty bushels of French turnips, thirty bushels of round turnips, twenty-seven bushels of sugar beets, ten bushels of onions, and a supply of garden vegetables for family use.

looking animals, and the Committee have awarded to Mr. Poore, the first premium for two year old steers, of six dollars.

Respectfully submitted,
For the Committee,

FREDERICK HOWES.

Lynn, October 1st, 1846.

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## ON BULLS.

The Committee on Bulls (present—S. Low, H. Ayer, N. Harris, R. A. Merriam, and F. Alley) REPORT:

That only two animals of this description were presented. One by J. H. Cogshall, of Lynn, half Durham and half Ayrshire; one by John Mason, of Salem, native breed.

Neither of these animals, in the opinion of the Committee, were worthy of the first premium.

They award for Mr. Cogshall's bull, the second premium of $6
" For Mr. Mason's bull, the third " of 4

It was a subject of regret with the Committee, that so few animals of this class were presented at the Show, when there are so many well worthy of approbation, that might have been brought forward. Your Committee were unanimous in the opinion, that the raising of our native breed of cattle should be encouraged within the County, in preference to imported animals, believing them much better adapted to the climate. For working oxen, none can be found superior to our native breed. And when the expense of keeping is properly taken into view, it may be doubted whether any milch cows can be found superior to our native breed. If then you would have oxen and cows of best quality, you must be particular in selecting and raising the best bulls; and when raised, not backward in exhibiting them.

In behalf of the Committee,

SOLOMON LOW, Chairman.

Lynn, October 1st, 1846.

## ON FAT CATTLE.

The Committee on Fat Cattle (present—W. Merrill of Danvers, Jesse Sheldon of Beverly, C. H. Holmes of Topsfield, and Joseph Newell of West Newbury) REPORT:

That one pair of cattle were presented by Mr. Joseph Towne, of Topsfield. These cattle had done the work on a farm of more than one hundred acres, and had received no extra feed for the purpose of fattening them. They were in very good condition, and in the opinion of the Committee had done extraordinarily well for their feed. The Committee could not place them in the first class of fat cattle; but they recommend an award of *ten dollars* to their owner, for the pair of cattle.

For the Committee,

WINGATE MERRILL.

Lynn, October 1st, 1846.

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## ON THE DAIRY.

The Committee on the Dairy have attended to the duty assigned them, and REPORT:

That only three samples of June butter were offered for examination, one of which was not entitled to a premium, as no statement was made of the produce from first of June to ninth of July, as required by the rules of the Society. Six samples of September butter were entered, three of which were unaccompanied by the required statement of the quantity made from twentieth of May to twentieth of September.

The Committee award the premiums as follows:

For June butter;

To Jonathan Berry, of Middleton, 1st premium, $10
To Ezra Dodge, of Wenham, 2d " 8

For September butter;

To Allen W. Dodge, of Hamilton, 1st premium, $10
To George W. Dodge, of Wenham, 2d " 8

To Jonathan Berry, of Middleton, 3d premium, $6
To John K. Cole, of Topsfield, 4th " Colman's European Agriculture.

Per order of the Committee,

GEORGE HOOD, Chairman.

Lynn, October 1st, 1846.

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JONATHAN BERRY'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—I present for your inspection, one pot of June butter, containing twenty-seven lbs., being a specimen of two hundred and fifty-four lbs., made between the first of June and ninth of July, from six cows and a two year old heifer. Also, two boxes of September butter, containing twenty-seven lbs., being a specimen of six hundred and ninety-nine lbs., made between the twentieth of May and twenty-seventh of September, from the same cows. Their feed has been common pasture until August, since then green corn fodder until September 9th; from which time two quarts of meal has been allowed to each cow per day.

*Process of making.*—The milk is strained into tin pans, where it stands from forty-eight to seventy-two hours. It is then skimmed, and the cream put into pails and set in a vault prepared for that purpose. We churn once a week. The butter-milk is worked out by hand, and the butter salted to suit the taste.

Respectfully yours,

JONATHAN BERRY.

Middleton, September 30th, 1846.

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EZRA DODGE'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN.—I present for your inspection, one pot of June butter, containing 30 lbs., being a sample of 75 lbs., made between the first of June and July 9th, from four cows. Their feed was a com-

mon pasture. The process of making was, to strain the milk into tin pans, in which it stands forty-eight hours; churn once a week, and use seven-eighths of an ounce of salt to a pound of butter.

EZRA DODGE.

Wenham, September 30th, 1846.

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ALLEN W. DODGE'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—I present for your inspection, a pot of June butter, of 25 lbs.; also a box, containing 26 lbs. of September butter, being a specimen of 1164 lbs. made since the 20th of May. This butter was made from the milk of thirteen cows, all of native breed. Their feed, till the tenth of August, was pasturing only, with the run of a few mowing lots: since that time they have been fed once a day with green corn fodder, raised for this purpose.

*Process of making.*—The milk is strained into tin pans and placed in a cool cellar; when the cream is sufficiently risen, it is skimmed off and, in the warm weather, placed in a well, about twenty-four hours before churning, to become cool. We churn once a week, and never rinse the butter with water in the churn. The butter is freed from butter-milk by thorough working with the hands, and is salted to suit the taste. The following day it is again worked over and weighed. We use the ground rock salt. The June butter has a small quantity of loaf sugar and saltpetre added to it, to aid in preserving it. From the above cows, we have also used milk for nine in the family.

ALLEN W. DODGE.

Hamilton, September 28th, 1846.

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GEORGE W. DODGE'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—I present for your inspection, two boxes of September butter, containing 26 lbs., being a specimen of 392 lbs. made between the twentieth of May and twentieth of September. This butter was made from the milk of six cows, one of which was farrow;

the milk of another we did not use for five or six weeks after the twentieth of May, and we have used the milk of one cow almost entirely in the family.

*Process of making*,—The milk is strained into tin pans, where it stands from twenty-four to forty-eight hours, according to the weather. It is then skimmed, and the cream is put in tin pails, which stand upon the cellar bottom. We churn twice a week. The butter-milk is worked out by hand. The butter is never washed; it is salted one ounce to the pound. A little salt is put in the cream pails, and the cream stirred at the times of addition.

The cows have been kept in a poor pasture, and have been foddered at night in the barn through the season, either with hay, grass or corn fodder.

Yours respectfully,

G. W. DODGE.

Wenham, October 1st, 1846.

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JOHN K. COLE'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—The process of making the accompanying butter was as follows: The milk is strained into tin pans; it stands from thirty-six to forty-eight hours, when the cream is taken off. It is then put into a tin can and in a cool place, till it is churned, which is about three days. The butter-milk is then drawn off and the butter rinsed with a pail of cold water. It is then taken from the churn and worked over, and salted to suit the taste, with rock salt. It is then deposited in a cool place, and stands twenty-four hours, when it is again worked and made into balls. The specimen entered for premium was made the present month.

Yours respectfully,

JOHN K. COLE.

Topsfield, September 30th, 1846.

## ON WORKING OXEN.

The Committee on Working Oxen have attended to the duty assigned them, and REPORT:

That fifteen pair of working oxen were entered for premium by the following persons:

| | | |
|---|---|---|
| Nath'l Felton, | of Danvers, | one pair, 7 years old, |
| Jacob P. Goodale, | " | " 7 " |
| John Hathaway, | " | " 5 " |
| Daniel P. King, | " | did not appear. |
| Jacob Galucia, | of Salem, | one pair, 7 years old, |
| Edwin Upton, | " | " 7 " |
| Joseph Horton, | of Ipswich, | " 6 " |
| Farnum Spofford, | of Andover, | " 8 " |
| B. W. Crowninshield, | of Topsfield, | " 6 " |
| Joseph Towne, | " | did not appear. |
| Moses Pettingill, | " | did not appear. |
| Franklin Alley, | of Lynn, | one pair, 7 years old, |
| Daniel D. Clark, | " | did not appear. |
| Joseph Hathaway, | of Marblehead, | one pair, 6 years old. |

The power and movement of the cattle were tried with a load of 5000 lbs. in a wagon weighing 1700 lbs.—total 6700 lbs. As before stated, only ten pair were tried, and one pair of them was excluded from their age, (8 years) not entitling their owner to competition for the premiums. After duly considering the action, size and strength of the other nine pair, with reference to their respective ages, the Committee award

| | | | |
|---|---|---|---|
| To John Hathaway, | of Danvers, | the first premium, | $10 |
| To Jacob Galucia, | of Salem, | the second " | 7 |
| To Joseph Horton, | of Ipswich, | the third " | 5 |

The pair belonging to B. W. Crowninshield, appeared remarkably well, and the Committee recommend a gratuity of Colman's European's Agriculture, for their excellence. The most of those offered did well—many of them so well as to render it rather difficult to decide which did best.

All which is respectfully submitted,

JACOB BROWN, Chairman.

Lynn, October 1st, 1846.

## ON FRUITS, FLOWERS AND VEGETABLES.

The Committee on Fruits, Flowers and Vegetables, REPORT:

That the exhibition of fruits this year, has exceeded, in variety and interest, any previous one held by the Society, and that the specimens presented were generally fine and well grown.

The contributions from J. S. Cabot, J. M. Ives, Robert Manning, William Stearns, of Salem; Andrew Dodge, of Wenham; M. Pettingill, of Topsfield; Ebenezer Brown, John B. Johnson, Joshua Webster, James Oliver, and others, of Lynn; contained many beautiful fruits. There were contributors of good specimens in smaller quantities: we noticed very large Duchesse d' Angouleme pears from J. N. Saunderson; Chelmsford do., weighing 18 ounces, from Reuben Johnson and Mr. Lewis; seedling peaches, of fair size and flavor, from Middleton, and Ezra Johnson, of Lynn; fine specimens of apples from Nathan Breed, Samuel Putnam, Ebenezer Neal, J. Breed and others. Of grapes, the Black Hamburgh from E. R. Mudge, and the Zinfindel from Andrews Breed, were well grown and finely colored. J. L. L. F. Warren, of Brighton, exhibited a variety of fine fruits; and his specimens in wax were generally admired.

From the endless variety of fruits now presented in the catalogues, the difficulty seems to be in the selection of a limited number for a small garden. The nursery-man finds his profit in multiplying varieties, and it is the ambition of the amateur who cultivates extensively, to swell his list of fruits, by the addition of every thing which is new; but the small grower requires those kinds only which by their good bearing qualities and thrifty habits are likely to repay him for the labor and care bestowed in their cultivation: he should therefore endeavor to select such good kinds as are suitable for his locality and soil. It is well known that some varieties flourish in a strong loam, others in a light and sandy soil, while a few, like the Bartlett pear and the Baldwin apple, seem at home in every variety of soil and exposure; hence the conflicting opinions of good cultivators, each giving the correct results of his own experience. Many kinds which take a high rank in the catalogues and which can be recommended for a large collection, are not desirable for a small one, owing to their unthrifty or unproductive habits, or variable character; while there are others, not strictly first rate in quality, yet so uniformly productive and healthy, that they are not to be neglected in a collection however small.

The exhibition of flowers was not large. The exceedingly hot and dry season has been unfavorable to the production of fine specimens. The boquets from the ladies of Lynn and Salem were arranged with good taste. The pyramids of flowers, the ornamental baskets, and the grass boquets were beautiful, and attracted much attention.

The Society is indebted to the Natural History Society of Lynn, for their liberality in relinquishing their own annual exhibition for the benefit of this; and for their valuable aid in the decoration of the hall, and the arrangement of the tables.

The Committee recommend the following gratuities:

FRUITS.—R. Manning, John M. Ives, Joseph S. Cabot and Otis Johnson, two dollars each; Ebenezer Browne, one dollar and fifty cents; G. W. Oliver, J. Oliver, M. Pettingill, A. Dodge and R. Mudge, one dollar each; J. S. Sanderson, J. Webster, H. A. Breed and W. G. Lake, seventy-five cents each; Andrews Breed, J. B. Johnson, E. Johnson, Nathan Breed, Dr. Nye, Alfred Peabody and J. Ober, fifty cents each; Samuel Putnam, E. F. Dodge, E. Neal, C. B. Holmes, R. Johnson, Isaac Childs, D. N. Breed, J. B. Gould, Joseph Breed, Cyrus Hoten, Samuel Tufts, D. Moulton, J. Berry, J. Daley, J. Alley, 3d, J. Marsh, F. Tudor, J. Tuttle, Isaiah Breed, William Preston, J. Brown and Josiah Newhall, twenty-five cents each.

FLOWERS.—Mr. West, of Salem, pyramidal boquet, one dollar; Miss Bowler, do., Miss Brown, do., Miss Eames, boquet, Miss Ingalls, do., and Miss Connor, pyramid of flowers, fifty cents each; Mrs. S. Newhall, do., Miss S. R. Ives, do., and Mrs. Parsons, do., twenty-five cents each; Mrs. R. Mudge, do., fifty cents.

VEGETABLES.—L. Wait, of Ipswich, and Abel Burnham, of Essex, one dollar each; N. D. Chase, of Lynn, William Coggshall and Josiah Newhall, fifty cents each; Jonas Holt, William Abbott, A. Hill, William Mansfield, Winthrop Newhall, Frederic Needham, Samuel Putnam, William Osborne, J. P. Woodman and Wm. P. Carlton, twenty-five cents each.

For the Committee,

OTIS JOHNSON.

Lynn, October 1st, 1846.

## ON FRUIT TREES.

The Committee appointed to award the premiums offered by the Society for Fruit Trees and Nurseries, have attended to the duties assigned them, and herewith REPORT the results of their examinations and the conclusions at which they have arrived:

Three applications only were made to the Committee for the premiums; those were by Messrs. William G. Lake, of Topsfield, Ephraim Woods, of Salem, and James B. Cole, of Beverly. The nurseries of each of these applicants were visited by some of your Committee in August and September last, and the trees as carefully examined as circumstances would permit.

The nursery of Mr. Wm. G. Lake, examined by the Committee, consists of about three acres of level land, well adapted by its soil and exposure to the purposes to which it is applied. It is well stocked with apples, peaches and some pears. The trees offered for the Society's premium by Mr. Lake, were about three thousand peach trees, budded with several different varieties, in but a small proportion of which the budding had been unsuccessful. Mr. Lake's trees, especially his peach and apple trees, appeared healthy, vigorous and thrifty, and his ground to be well cultivated. His mode of cultivation and general course of management cannot now be related; for, although a statement from him containing many particulars was forwarded in season to a member of your Committee, yet it is not where it can now be made use of.*

* Mr. Lake, in a letter forwarded November 28th, says: "I have now about one hundred thousand trees set out in nursery rows, which I have raised from the seed, which are from one to three years old; among which are some of the rarest kinds of apples, pears, plums, peaches, cherries, &c.

The part of my nursery which was proposed for the consideration of the Committee, contains about four thousand peach trees. These trees were planted in the spring of 1845, in the following manner: The land was ploughed in 1844, and planted with potatoes that season, and no manure has been put on the ground since that year. The peach stones were laid on the top of the ground, until they had the action of a severe frost. I then cracked the stones at my leisure, and put them into sand, and set them in the cellar until spring. In April I planted them out in rows, three feet by eight inches, with a light covering of earth. In September of the same year, I budded them with those kinds of fruit which I had found to be of superior quality. The buds took well, and the last spring I topped them down within two inches of the bud, which was set near the ground. The last summer they have made wood very rapidly. A large portion of them have grown seven and a half feet high.

The nursery ground, which I cultivate, contains about seven acres. On this ground are four hundred standard trees; among which are about seventy kinds of fruit, of the choicest varieties, which I have obtained from the best nurseries in this and foreign countries. I take great pleasure in the cultivation of these trees, and shall be pleased to give any information in my possession, in relation thereto."

The nurseries of Mr. Ephraim Woods are situated in North Salem; and the one visited by your Committee consists of about three acres of rather uneven land, some portions of which are gravelly, with ledges. The soil appeared to be well cultivated and free from weeds, though seen under somewhat disadvantageous circumstances. The stock here consists mainly of apples, pears and some peaches. The apple and peach trees were vigorous and healthy, and had made a fine growth: they are all budded with the most approved varieties of fruit, and in nearly all of them the budding had been a successful operation. The trees offered by Mr. Woods for premium were apple trees only, and in the statement furnished to the Committee, he says:

"I have about three thousand and sixty apple trees, one year's growth from the bud, of the most approved varieties. The stocks, when budded, were two or three years from the seed—one and two, mostly one, when they were set out. The soil is a loam six to nine inches deep, on a coarse gravelly bottom. The ground was manured when the trees were set out, to the amount of five loads of common barn yard manure to the acre, spread on the surface and ploughed in. I have hoed the ground as I would in the cultivation of corn and potatoes, so as to keep it free from weeds."

Mr. Woods has also other nursery ground, well stocked with remarkably thrifty and fine pear and apple trees; but as they did not come within the Society's rules for premium, they were not offered by him.

The nursery of Mr. James B. Cole, in Beverly, contains about two or three acres of loamy soil. Its surface is level, and appears well suited to the purposes of a nursery. The stock consists principally of apples, with some pears. The apple trees were healthy and thrifty, and the ground seemed to have been well taken care of. The trees offered by him for premium were about two thousand apple trees. Mr. Cole's mode of cultivating his nursery, and his course of management will appear by the following extract from a statement furnished by him to the Committee. He says:

"The apple trees are about two thousand in number, one year from the bud. The stocks, when they were budded, were three years from the seed—two, when they were transplanted. In the spring of 1844, they were transplated into rows, four feet apart, and from eight to ten inches from each other, care being taken to select those of uniform size. In August following, I budded them with the best

standard varieties, principally of winter fruit. The land was broken up in 1843, and planted with potatoes. The soil is a light loam, eight to ten inches deep, on a fine gravelly bottom. I have manured it but once, and then to the amount of three cords of stable manure to the acre. I have hoed the ground as I would in the cultivation of corn and potatoes, so as to keep it free from weeds, light, and in good condition."

No pear trees were exhibited to your Committee for premium. In all the nurseries visited, the young seedling pears had evidently suffered from the effects of the preceding winter, and nearly all of them, as is almost uniformly the case with young seedling pears from the middle of August to the middle of September, had dropped the quarter part of their leaves. The cause of this disease, for such it must be, appears unknown; whatever it may be, it is a serious evil, injuring the growth of the tree and diminishing its thriftiness, and besides, as the bark will not readily peel on a tree thus deprived of its leaves, frequently rendering it necessary to bud them at too early a period of the season. The discovery of the cause of this disease in pear trees, and thus, perhaps, leading to the discovery of its cure or prevention, is a subject worthy of the careful attention and inquiry of those engaged in their cultivation.

Taking into view all the circumstances, the species of trees offered for premium, their growth, vigor and general appearance, as well as the number of specimens, the quality of the soils, and the cultivation of the several nurseries examined, your Committee are of opinion that Mr. Woods is entitled to the first premium offered by the Society, Mr. Lake to the second, and Mr. Cole to the third, and they accordingly award these premiums as follows, viz:

To Ephraim Woods, of Salem, the 1st premium of $10
To Wm. G. Lake, of Topsfield, the 2d " 8
To James B. Cole, of Beverly, the 3d " Washington's Letters on Agriculture.

All which is respectfully submitted,

For the Committee,

JOS. S. CABOT.

Lynn, October 1st, 1846.

## ON AGRICULTURAL IMPLEMENTS.

The Committee on Agricultural Implements, having attended to their duty, respectfully REPORT:

That four articles, only, were presented to their attention, viz: An improved cultivator, by David Baker, of Ipswich; two bee-hives, by W. H. Brickett, of East Cambridge, and a harness to prevent cows sucking themselves, by James Porter, of Lynn. The cultivator differs in its construction from those in common use,—having a cast-iron roller, with elevated longitudinal lines, preceding a row of connected cast-iron teeth, that can be graduated at pleasure. The roller breaks down and mangles the weeds, and the teeth following at a suitable depth, draw up their roots—making thorough the work of destruction. The Committee think favorably of the instrument for land free from stones, and would commend it to the examination of farmers; but the evidence required by the rule of the Society, "of the work done by the implement *before* it is exhibited, and of its having been *used* and *approved* by some practical farmer," not being before them, the Committee do not feel authorized to award a premium.

The cultivation of bees has, of late years, engaged the pens of many practical writers, and may unquestionably be successfully pursued, to a certain extent, by every farmer. If more attention was paid to the production of honey, it would find a ready market and a fair remuneration, and the community would be relieved from the use of the article now extensively sold as "southern honey," but which is, in reality, a "northern manufacture." No person was present to point out the peculiar excellencies of the hives referred to. They appeared, however, well adapted to the use of bees, but the Committee did not perceive in their construction any improvement upon the best kinds commonly employed.

The Committee understand that many cows in Essex County and elsewhere, have acquired the reprehensible habit of milking themselves. This practice, though indicating an appreciation of a lacteous diet, is considered an unwarrantable invasion of juvenile rights and dairy prerogatives. The harness exhibited by Mr. Porter, and worn on the occasion by his cow, will effectually suppress the evil, without detriment to the reasonable freedom of the wearer. It is simple in

its construction, and can be made by any farmer, at a trifling expense. It consists of a headstall with a crupper attached, and a band passing round the body behind the fore-legs, which band is connected on each side of the neck with the headstall, by a strap. This harness is in every respect preferable to the old fashioned head-gear of sharp nails, or to tying the self-depredator head and foot. The Committee recommend a premium of three dollars.

It is not to be supposed, from the small number of articles exhibited on this occasion, that a more extensive show in this department could not have been made. The materials are ample, and a moderate effort on the part of those most interested, can, at any time, render this exhibition worthy of New England genius and skill. Nor is it to be thought that agriculture is unfavorable to invention and improvement. On the contrary, few pursuits afford a wider range for their exercise, as any one will perceive, who examines the extensive collections of our Metropolitan warehouses. We there, as well as in the tool houses of our best farmers, see the fruits of Agricultural Associations. Under the stimulus they have afforded, the most important implement of a farm—the plough—has been brought to a perfection not exceeded by the longer experience of any other country. Even the far-famed "Victoria" plough, imported from England as the crowning specimen of British skill, has, upon fair trial, been fairly eclipsed by the superior execution of ploughs of Massachusetts manufacture: proving, that in "draught" as in diplomacy, the Yankees are a match for the nation who, it has been said, "goes abroad to be savage."

In promoting this work of improvement, the Essex Agricultural Society has successfully shared, and the neat and beautifully formed implements now every where seen in New England, contrast strikingly with the uncouth tools of a past generation, or that are still used in the southern section of our country. It is true, all inventions are not improvements, and he would be an unwise farmer who purchased, before trial, every implement claiming to be such. The discrimination of a sound judgment is here to be exercised, and the size of the farm, and the character of crops cultivated, should determine the kind and quantity of tools to be procured. There are some, however, which can be recommended, as of unmistakable excellence. Among these are the scruffle hoe, for the cultivation of root crops, the cultivator, the roller (which any farmer can make) and the horse-rake. These implements have all been proved, and farmers

who possess neither (and there are many such) will find their purchase an economical investment.

EDWIN M. STONE, Chairman.

Lynn, October 1st, 1846.

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## ON THE USES OF SALT IN CULTIVATION.

Loudon, in his Gardener's Magazine, speaking of the Bezi de la Motte pear, says: "It is truly surprising that a fruit said by Quintenne, an old writer, to surpass the Dogenne in flavor, should have been so long neglected, as to be but recently brought forward." It is to me quite as strange that the uses of salt have been so long neglected in agriculture. As a manure it was known in the time of James I. and Charles I., as we find by the learned Gervase Markham, who says in his work on husbandry: "In all my former relations touching the bettering of ground, I do apply, as one of my chiefest ingredients, salt sand, salt weeds, salt water, salt brine, and many other things of salt nature, as indeed as the manures and marles whatsoever must either have a salt quality in them;" and again: "If your ground lye farre from the sea, then to every acre of land you shall take two bushels of bay salt, and in such manner as you sow your wheat, you shall sow this salt upon the ground." Lord Bacon, of the seventeenth century, having noticed the success of the Cornwall farmers, declares that the "best manure next to marle is sea sand, which no doubt obtaineth a special virtue by the salt water, as salt is the first rudiment of life." A more modern Scotch writer affirms that "the finest crops of hemp and flax raised by the Milanese, are from lands on which salt is strewed." The same writer says: "As to the proportion of salt to be used on land, it ought to be according to the nature of it; cold, wet, clayey land requiring more, and loose soft sand, though it be poor, requiring less." In Hitt's Treatise on Fruit Trees, he asserts, upon a sandy soil, sixteen bushels to be a proper quantity for one acre. "Twice only," says he, "have I had an opportunity of buying a few tons of foul salt, using it both times on a barley tilth, sowing the salt immediately after the barley; the event was perfectly satisfactory, the verdure of the

spring exceeding anything of the kind I ever saw." "Mr. Beck, gardener in Chorley, has constantly made use of salt for thirty years, principally upon his onions, and he has invariably found the salt to exceed every other kind of manure which he has used for the purpose; his method is to sow the salt immediately after the seed is covered in, using not less than sixteen bushels per acre." "A farmer near Lancaster, England, has been in the habit of carting salt water to put upon his dung whilst in the heap, before it is taken to the ground; and has found that it very much enriches the dung, and makes it better manure." The following experiment illustrating the effect of salt is related of a Mr. Seckler, "who made a little heap of earth in the midst of a field, on the top of which a cart-load of refuse salt was thrown; the earth in the heap itself, and (after its removal) the earth under it, for upwards of two feet deep to the clay, was rendered so perfectly barren, that the most common weeds would not vegetate in it: this barren earth, however, furnished the richest dressing for the remainder of the field. Mr. Seckler found salt the best preservative against the mildew in wheat; when the wheat followed turnips with salt, it escaped the mildew, which attacked other fields which were not salted." The celebrated farmer, Sir John Sinclair, says of salt, that "like every other excessive stimulant, if used in large quantities its tendency is to destroy the vegetable substances with which it comes in contact, (as is the effect of guano) but in *moderate quantities* it promotes the growth of vegetables."

At the present day, many are turning their attention to the use of this article as a fertilizer, as well as a top-dressing in orchards for the destruction of insects. We commenced our experiments upon the use of salt and saline substances in 1828, particularly with the plum tree, and have been successful, not only in having good crops of fruit from that time to the present, but also rendering (in connection with clay) our soil—which was naturally of a light and sandy loam, subject to drought—one of a more retentive and prolific nature. We have also used brine upon the gooseberry and currant bushes for the destruction of insects, with decided benefit, by dissolving salt in water in the proportion of one pound to about four gallons. We however proportion this mixture according to the state of the plant; thus, for the gooseberry, we applied, early in spring before the shoots or leaves were at all developed, a decoction so strong as to whiten

the branches, without any perceptible injury to the fruit; but if deferred until the growth commences, we use it much weaker.

On the effect of sea sand (so much used in Cornwall) we have had some little experience, having in the fall of 1841 drawn from the shore eight to ten horse cart loads, and placed them upon one quarter of an acre of light sandy loam; it was then spread over the surface and ploughed in. The spring following (April 13th) we sowed half a bushel of peach seed (the stones being first cracked) in drills. These came up well, and upon the first week in September following we budded several hundreds. These averaged larger than any seedling I had previously seen; many of them measured an inch through at the butt, and this season I have taken fruit from the unbudded ones, consisting of seventy-five varieties.

In applying salt to the land, we prefer the winter or towards the spring, but always *previous to the swelling of the buds*. Our method is to spread it upon the surface, where it remains until the ground is in a proper state to work; it is then dug or ploughed in.

I have, the past season of 1846, used rock-weed taken wet from the ocean, in planting potatoes, placing the weed in drills about three feet distant, and planting a set at each end of the weed, covering all about four inches deep with soil, the crop was good, entirely free from the rot or wire worn.

J. M. IVES.

Salem, November 23, 1846.

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## ON GRAIN CROPS.

The Committee on Grain Crops respectfully Report:

That Mr. C. H. Holmes, of Topsfield, is the only claimant for the premium of the Society for the best conducted experiment in cultivating beans. The Committee did not on the whole think that he was entitled to the premium; but recommend that for his experiment in the cultivation of this article, and the account of them in his communication to the Society, a gratuity of five dollars be awarded to him. They also recommend that the following extract from his statement be published in the Transactions of the Society.

Respectfully submitted,

For the Committee,

F. HOWES.

Lynn, October 1st, 1846.

C. H. HOLMES'S STATEMENT.

It is singular that the cultivation of the bean is not more extensive among Yankee farmers, who generally have an eye to their own interest, for certainly there is no crop raised (except in the neighborhood of a market) which yields so great a profit;—as the bean is adapted to every soil, yielding from fifteen to twenty-five and sometimes forty bushels per acre, and requiring a small outlay of manure and labor to its production. The small pea bean has my preference to all others, because it produces more to the acre, is not so liable to be fractured in threshing, and last but not least, is worth twelve per cent. more in the market. On light lands, the bean acquires its peculiar name of *bush bean*, having all its stems high and dry from the ground, and yielding a finer produce than on any other soil. On more fertile and heavy soils, it covers the whole ground with its luxuriant vines, producing a large crop of beans and straw, the latter being worth about two thirds the price of English hay, for stock of any kind. In preparing the ground for seed, it should be either fall-fallowed or cultivated one year previously, and after repeated ploughings, four cords of muck composted with one half barn manure, or, what is better, one sixth privy manure, harrowed in, is sufficient for one acre. It should then be drilled three feet apart, and the beans planted four inches apart in the drills. Two hoeings, accompanied by the cultivator, are sufficient. At harvest, the beans are pulled and stacked, by placing a stake firmly in the ground, around which are thrown stones sufficient to lay them on, which should be done with the roots to the stake: or, two stakes may be firmly set in the ground, and withed a foot therefrom, on which the beans are placed and bound firmly at the top, and thus the beans may remain for weeks, impervious to rains.

Last year I raised from about five acres of heavy land, manured with four cords of muck compost or four cart loads of peat ashes per acre, one hundred bushels of beans and four tons of straw. This year I planted eight acres of light land, fall-fallowed, manured in the hill with privy compost, seeded with from three to five beans per hill. They grew with great luxuriance, producing from one hundred and twenty-five to two hundred pods per hill, two on one stem. I counted two hundred formed and forty-four unformed pods with from five to seven beans each, or about twelve hundred for one. In August, owing to the unequal temperature of the weather, they were struck

with a mildew or rust, and instead of one hundred and fifty bushels, I raised only fifty-seven bushels. Another piece of heavy land, which I planted in drills, with corn in hills, shared the same fate, producing only eight bushels. My whole crop amounts to sixty-five bushels of good beans, worth and engaged at two dollars per bushel. At the last hoeing of the piece I sowed grass seed in the intervals, which looks finely.

From several years' experience in raising beans, I gather these facts: That land for beans should be fall-fallowed or planted with some other crop previously; that the manure should be broad-cast, the land planted in drills with intervals of three feet, the stalks four inches apart in drills, and the beans pulled and stacked before fully ripe, as first mentioned.

The whole cost of raising the crop this year on the eight acres, was as follows:

| | | |
|---|---|---|
| Ploughing, | | $21 |
| Manure and muck, and preparing the same, | | 25 |
| Planting, | | 26 |
| Hoeing and cultivating, | | 25 |
| Pulling and threshing, | | 12 |
| Seed, | | 6 |
| | | $115 |
| Product—57 bushels of beans at $2, | $114 | |
| 2 tons of straw at 8, | 16 | |
| | | $130 |

C. H. HOLMES.

Topsfield, September 30th, 1846.

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## ON DOMESTIC MANUFACTURES.

The Committee to whom was assigned the duty of examining COUNTERPANES, CARPETS and RUGS, respectfully REPORT:

That they have witnessed with great satisfaction the undiminished interest which the ladies of the County have taken this year, in this branch of the exhibition. It is a source of much encouragement to members of the Society, and others interested in its objects, that while they are zealously contributing to the elevation and improve-

ment of agriculture in the County, the ladies, upon whose smiles or favors so much depends in the ordinary transactions of life, are contributing with the same zeal, by their various ingenuity and manual skilfulnes and dexterity, to give to the exhibition an equally high reputation in that branch which belongs to them. We believe the exhibition in this department excels any former one, both in the number of articles presented, and in the superior style in which they were executed; and we have to regret, with former committees, that the time allowed for the examination is so limited. There were about fifty rugs and mats entered for premium, all of them of choice and excellent workmanship, and entitling the makers to much commendation, and we should have been glad, had the rules of the Society permitted, to have awarded several gratuities in addition to those we have awarded.

There were not so many specimens of carpeting as we should have been glad to have seen, but such as were presented were very neat and elegant, and we only regret that we cannot particularly name them all.

The number of counterpanes was large and most of them were made with much taste and skill. The most difficult matter has been in the great variety presented to select those which are more particularly contemplated by the Society in their offer of premiums. We have selected those which seem to combine the skill in the arrange ment and in the work, without particular regard to the material

We have awarded to

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|---|---|
| Mrs. Nancy Bailey, of Beverly, for Rag Mats, the 1st prem. | $3 00 |
| Anna Chamberlain, Beverly, Wool Rug, 2d prem. | 2 00 |
| Mrs. J. W. Butler, Newburyport, Cruel Rug, gratuity, | 1 00 |
| Mrs. D. B. Oliver, Rag Rug, gratuity, | 1 00 |
| Mrs. Hannah P. Berry, Danvers, Yarn Rug, gratuity, | 1 00 |
| Mrs. T. J. Pratt, Lynn, Braided Mat, gratuity, | 1 00 |
| Perley Tapley, Danvers, Stair Carpet, the premium, | 3 00 |
| Sally E. Sheldon, Beverly, Rag Carpet, gratuity, | 1 00 |
| Perley Tapley, Danvers, Ingrain Carpet, 1st prem. | 5 00 |
| Mrs. John Pearson, Newbury, Rag Carpet, 2d prem. | 3 00 |
| Latty Pease, Salem, a lady 66 years old, Rag Carpet, gratuity, | 1 00 |
| Mrs. S. J. Ireson, Lynn, Silk Patch-work Counterpane, 1st prem. | 4 00 |
| Mrs. Sarah J. Berry, Lynn, Patch-work Counterpane, 2d prem. | 2 00 |
| Miss Lucy B. Newhall, Patch-work Counterpane, containing 7054 pieces, gratuity, | 1 00 |

Harriet A. Goodridge, Lynn, a girl 5 years old, Patch-work Quilt, gratuity, 1 00

M. E. Johnson, Lynn, 5 years and 3 months old, Counterpane, gratuity, 1 00

A young lady of Salem, Counterpane, containing 9579 pieces, gratuity, 1 00

Miss Matilda Osgood, Salisbury, Knit Quilt, containing 1,704,105 stitches, gratuity, 1 00

THOMAS B. NEWHALL,
GILBERT TAPLEY,
EBENEZER SWEETSER, } Committe.

Lynn, October 1st, 1846.

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The Committee on LEATHER and ARTICLES MANUFACTURED THEREFROM, REPORT, that they respectfully recommend premiums and gratuities to be awarded as follows:

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|---|---|
| Samuel P. Spofford, Brogan Shoes, 1st premium, | $3 00 |
| William S. Horner, Brogan Shoes, 2d prem. | 2 00 |
| Amos Gould, Thick Boots, 1st prem. | 3 00 |
| Waldo Thompson, Thick Boots, 2d prem. | 2 00 |
| J. Wait & Sons, Calf Skin Boots, 1st prem. | 4 00 |
| Charles Dickinson, Calf Skin Boots, 2d prem. | 2 00 |
| Thomas P. Richardson, Gaiter Boots, gratuity, | 1 00 |
| Harrison Newhall, Gaiter Shoes, gratuity, | 1 00 |
| N. A. Breed, Child's Gaiter Boots, gratuity, | 1 00 |
| N. A. Breed, Child's Gaiter Shoes, gratuity, | 50 |
| N. A. Breed, Boy's Pumps, gratuity, | 1 00 |
| Nathan Kimball, Gaiter Boots, gratuity, | 1 00 |
| Nathan Kimball, Satin Slippers, gratuity, | 1 00 |
| Nathan Kimball, Patent Leather Slippers, gratuity, | 1 00 |
| Moses Spofford, Shoe Strings, gratuity, | 50 |

For the Committee,

FRANCIS S. NEWHALL.

Lynn, October 1st, 1846.

The Committee on MANUFACTURES OF METALS, FANCY WORK AND OTHER ARTICLES, recommend that gratuities be awarded as follows:

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| Barry & Bigelow, of Lynn, House Papers, | $3 00 |
| Smith & Chamberlain, Salem, Jewelry, | 2 00 |
| Thomas Tennet, Newburyport, Surveying Protractors, | 2 00 |
| Mrs. D. Farrington, Lynn, Chair Covering, | 50 |
| James F. Nourse, aged 9 years, Lynn, Lamp Mat, | 50 |
| Miss E. H. Whitney, Danvers, Lamp Mat, | 25 |
| Sarah E. Lummus, Ipswich, Work Bag, | 25 |
| Joseph A. Potter, aged 8 years, Salem, Artificial Fruit and Flowers, | 1 00 |
| S. H. Moore, Lynn, Centre Table Basket, | 75 |
| Joseph Edwards, Lynn, Taylors' Crayons, | 50 |
| Miss A. L. Nourse, Beverly, Chair Covering, beautifully wrought, | 75 |
| Laura S. Dodge, Hamilton, Travelling Bag, | 50 |
| Mrs. Twisden, 88 years old, Lynn, Cotton Shirt, | 50 |
| Louisa Lander, Danvers, Crayon Drawings, | 75 |
| Maria L. Fowler, Danvers, Wrought Fire Screen, | 25 |
| Susan M. Perley, Georgetown, Travelling Bag, | 25 |
| Henry Moulton, Salem, Large Baskets, | 50 |
| Theophilus N. Breed, Lynn, Shoemakers' and other Tools, | 2 00 |
| George Hastings, Georgetown, Polished Steel Garden Rake, | 25 |
| David Stiles, Middleton, Horse Shoes, | 50 |
| S. Oliver, Boy's Rockaway Coach, | 1 00 |
| Sarah Ellen Hale, 11 years old, Salem, Lamp Mat, | 50 |
| Susan D. Breed, Lynn, Lamp Mats and Ottomans, | 1 00 |
| Miss M. J. Roundy, Beverly, do. wrought with beads, | 1 00 |
| Lydia Lamboard, Lynn, Lamp Mat and Flowers, | 50 |
| Eliza J. Brown, Lynn, Crayon Drawings, | 50 |
| Sarah F. Bradstreet, Beverly, 4 years old, Worsted Purse, | 50 |
| Adaline B. Ames, Lynn, Table Covering, | 50 |
| Susan Perley, Georgetown, aged 11, Table Covering made between school hours, a beautiful article, | 2 00 |
| Mary R. Kimball, Salem, Sofa Pillow made between school hours, | 50 |
| Mrs. W. H. Allen, Manchester, Fire Screens, | 1 00 |
| Mrs. Isaac Newhall, jr., Lynn, Tabourette, | 50 |
| Mrs. Margaret H. Felt, Salem, Tabourette, | 25 |
| Mrs. Cox, Salem, fine specimens of Worsted Work, | 50 |
| Mrs. Almira P. Perley, North Danvers, Ottomans, | 50 |

The Committee on Cloth and Hosiery, having but two entries, request us to Report, That Miss Judith Pickett, of Beverly, 87 years of age, sent in one pair of Knit Gloves, for which they award a gratuity of $1 00; and to Sarah S. Bradstreet, aged 4 years, for one pair of Wollen Hose, $1 00.

Respectfully submitted,
For the Committee,

JOHN M. IVES, Chairman.

Lynn, October 1st, 1846.

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## ON MILCH COWS AND HEIFERS.

The Committee on Milch Cows and Heifers (present—T. E. Payson, Thomas G. Dodge, Daniel N. Breed and William Osborn) award the Society's premiums as follows:

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|---|---|---|---|
| To Warren Averill, | of Ipswich, | 1st premium, | $10 |
| To Samuel Soule, | of Lynn, | 2d " | 7 |
| To James Marsh, | of Danvers, | 3d " | 5 |
| To Samuel Dane, | of Hamilton, | 4th " | Colman's European Agriculture. |

The statements of these gentlemen accompany this report; and to them the Society are referred, for the merits of the cows.

For heifers in milk, they award

| | | | |
|---|---|---|---|
| To Manning Dodge, | of Ipswich, | 1st premium, | $7 |
| To Ebenezer G. Berry, | of Danvers, | 2d " | 5 |

They also recommend a gratuity of two dollars to Ebenezer Butterfield, of Saugus, for a very promising year old heifer, and three dollars to Col. B. Poore, of West Newbury, for two large improved short horn heifers, two years old.

Col. Poore exhibited cows of the same blood, but did not enter them for premium. It is but an act of justice to state, that no man in the County has taken more pains to add to the interest of our exhibitions for several years past, than Col. Poore. For this he deserves at least our thanks.

George Hood, Esq., of Lynn, exhibited several young cows, the stock of which has been favorably known to the farmers of the County for several years.

No other cows were worthy of particular notice, except an Ayrshire and a Hereford cow, full-blooded, exhibited by Mr. Pitman, of Lynn. These last were probably exhibited as specimens of their different breeds; for *extraordinary* milking properties, neither of them seemed to possess.

When we take into view the place of the exhibition, and its vicinity, the display of milch cows was not of such a character as to stir up a very strong feeling of pride. Lynn itself must afford a good market for fresh butter and milk, while Salem, its larger and opulent neighbor, demands large quantities of both. Beverly, Marblehead and Danvers, also in the immediate vicinity, all contribute to make the keeping of milch cows, in this southern section, more profitable than in any other part of the County. For this reason, cows are better fed, better sheltered and in all respects better provided for, than in many other parts. Their milking properties are therefore fully developed. If, then, the County has any cows of which to boast, we should expect to find them in that vicinity. However it may be, one thing is certain, they were not at the Cattle Show. We hope that another year, those gentlemen in the vicinity, who own superior cows, will give the Society an opportunity to look at them.

In connection with this report, the Chairman of the Committee asks to be excused for venturing one or two suggestions, with which the Committee have nothing to do. He alone is responsible for them. The subject is of considerable importance, and all farmers are more or less interested in it. Every man who keeps a cow is interested in it. Individual feeling is oftentimes wonderfully excited by it. The produce of a favorite cow is the subject and perhaps the only subject about which an honest man will tell the whole truth and a good deal more. It is *pretty* easy for a man to believe that his horse trots a mile in *three* minutes, if he does it in *five*—but it is a *little easier* for a man to get ten quarts of milk into an eight quart pail. He takes his desire to have it so, for an assurance that it is so. It is a fact often confirmed, that cows for which extravagant prices have been paid, sadly depreciate in the hands of the purchasers. From sixteen quarts of milk a day they dwindle to eight, merely by changing owners. Such things have happened in high places, where the Agriculture of Massachusetts expects and has a right to expect better things. The owners of most of the three-minute horses have so much fondness for them, that they never put them to that speed;

so cows that give twenty quarts of milk a day are often heard of, but seldom seen.

Of the many things which might be taken up in connection with the subject, the space allowed for this report will permit me to touch upon two only—the kind of cow most profitable for the farmer, and the mode of keeping. Upon the first of these, the opinion of many of my friends may perhaps differ from my own.

Among cattle there are these four general divisions—short horns, long horns, middle horns and hornless. Each of these classes has its peculiar merits and its friends. So prejudiced indeed are many of the friends of one, that they can see nothing worthy of regard in any of the rest.

In New England, cattle have been divided into two classes—native and imported. Between these the farmer has to choose. I speak of the general farmer, and not of the milk-man, who selects his cows with regard to *quantity* only, careless of the quality of their milk. Of the *imported* breeds, those recommended for their qualities are the improved short horns and the Ayrshires. The *former* we have long had among us; the *latter* are but little known in the County. Which is to be preferred? "Cut your coat according to your cloth," is a very trite maxim, but it has of late grown somewhat out of fashion. In many parts of the County, the pastures, in summer, are short and greatly over-stocked. For winter feeding, we have an excess of mean hay, and every where and always a rugged climate. The prudent farmer, looking to profit rather than fancy or experiment, will undoubtedly be partial to *cows* rather than *breeds*. He will prefer a *good* cow without a pedigree, to a *poor* cow with the whole herd book to back her; and I think he will adopt this general rule—that small cows are more profitabe than large ones, and for these reasons:

A small cow requires less food to supply the natural waste of the body than a large one. The small Canada cow, for instance, will pick up a subsistence from pastures on which some of the larger breeds would starve. Young and growing cattle will not only *grow*, but *gain flesh*, on pastures where large cattle, although arrived at their full size, will fall away. Again, small cows give the richest milk from the same kind of food—and sometimes from the same weight of food, give a greater volume of milk than large ones. It is said, that the small, long-haired cow of the Scottish Highlands,

gives a richer milk than the Ayrshire—while in England the small Alderney cow surpasses any other in that respect.*

Now will native or imported stock furnish the most profitable cow? It is difficult to define what a native cow is. Youatt says, "The breeds of cattle as they are now found in Great Britain, are almost as various as the soil of the different districts, or the fancies of the breeders." Our cattle, like ourselves, are of British origin. Careful observation will detect in the mongrel race, traces of almost all the breeds of Great Britain. It is impossible, therefore, specifically to designate their peculiar characteristics. Probably the prevailing blood in this County is the North Devon or the Sussex, neighboring and kindred breeds of animals. Abused, neglected, the *meanest* of them raised, I believe only one systematic attempt has ever been made to improve them. The most indiscriminate crossing is going on at all times, and in all places. Yet the Oakes cow, the Nourse cow, the Haverhill heifer and others,—not only native cows, but bred in our own County,—have not been and cannot be surpassed. Acclimated, and suited to the soil, this native stock,—a medley of all races, however difficult to be described,—is of far too much value ever to be supplanted by foreign varieties.

The large size of the improved short horn cow is not the only objection to be brought against her. It is a well known fact, that the original and leading object of the breeders of this stock, was to improve the carcass. They succeeded in accomplishing their object, with a rapidity that astonished themselves. But what they gained in one respect, they partially lost in another. This beautiful form, increased size, and an aptitude to fatten which could not be resisted, were incompatible with good milking qualities. The latter were in fact almost destroyed. Many of the breeders were prejudiced against the stock of their neighbors, and bred in and in. This, of necessity, made the defect greater and habitual. Late in the day they discovered their error, and some of them attempted to remedy it. Others preferred beauty of form and good qualities for the butcher, caring not whether these could or could not exist with good

* A very striking illustration of the difference in the quality of milk given by two cows in the same circumstances, is given by Mr. Malcolm, in his Compendium of Modern Husbandry. He kept an Alderney and a Suffolk cow; the latter the best he ever saw. During seven years, the milk and butter being kept separate, it was found, year after year, that the value of the Alderney exceeded that of the Suffolk, though the latter gave more than double the quantity of milk at a meal.—*British Husbandry*, vol. ii. p. 397.

milking properties. I do not believe that the milk stock of the County has been benefitted by crossing with them. It seems to me that the superior cows among them are the exceptions. We have gained in size, which we did not want, and which the quality and quantity of our food cannot well support; but we have not increased in value. In the ox, we have got a little more symmetry of form, but we have got with it, a delicacy of constitution, illy adapted to the hard fare, hard climate and hard labor of New England.

The Ayrshires come to us with the reputation of being the best milk stock in Great Britain. Their smaller size and closer knit frames show that they can live, where the improved short horns cannot. Time will determine whether they prove equal in this country, to the recommendation of them in the old. "Wisdom is neither inheritance nor legacy," therefore try them: but if they do not prove better than our native stock, a wise course will be to "hold fast that which is good."

By the mode of keeping, I mean the general treatment of the animal. We require the cow to furnish us a calf annually, and a daily supply of milk for nearly the whole year. Now if any animal deserves better treatment than the rest, where all are so well deserving, it is the cow. All she asks, to meet our demands upon her, is suitable food, comfortable shelter, to be kept dry and clean, kind words and kind usage. How many cows there are in the county, which never know the enjoyment of any of these, until near the end of their miserable and half-starved existence they are put up to fatten! How many farmers there are who give their oxen and horses the best that their barns afford, whose cows look as if they were hardly allowed the refuse of the cribs! The ox and horse are worked. They go from home, and *pride feeds them.* But the cow, it may be, has managed on a short pasture to give some milk and get a little flesh in summer; but the "winter of her discontent" has come. Who has not seen in almost every town in the County—when winter was at its height, and, when the fur of the buffalo could not keep out the piercing wind, as it drove the light snow far through every crevice—cows turned out to go half a mile to water, and left out half, perhaps the whole day. It may be that they have not had a dry bed since they were taken from the pasture or the field, or nearly one half the body is soaked with urine and covered with frost. Seeking the lee of some merciful stone wall, shrinking into the smallest possible space, quiver-

ing in every limb, with half-glazed eyes, hair standing in all directions, thus doing the best they can to keep off the cold, with bones almost protruding from the skin. This is the animal which in Holland is thought worthy to be separated from the parlors of the wealthy only by a glass door! Men with souls, look on and heed not that they are breaking God's law, and doing violence to their own natures. Surely, the statute against cruelty to animals ought to be enforced.

I would point out some of the leading features of *good* management of cows, did I not hope for the credit of the County, that most farmers studied and practised it. Those who do not, if humanity cannot compel them, I hope their own interests will.

Respectfully submitted,

T. E. PAYSON, Chairman.

Lynn, October 1st, 1846.

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WARREN AVERILL'S STATEMENT.

*To the Committee on Milch Cows and Heifers:*

GENTLEMEN,—I offer for your inspection, my cow Flora, native breed, seven years old. Said cow calved on the fifth day of September. In the three past weeks she has made 22¾ lbs. of butter, from what milk the calf left after sucking. Average milk per day, a trifle over six quarts more than the calf sucked. The said cow calved the last season the twenty-first day of April. The ten months following, her milk was kept separate for butter; she made from the milk 401½ lbs. butter. After that, we sold her milk, as it was more profit than to make butter. The cow was kept the past season on hay (clover) with twenty bushels carrots; no meal. Since she calved I have given her one quart meal per day, and a common pasture. The calf is from the bull owned by Augustine Heard, Esq., of this town, a full blooded Ayrshire.

WARREN AVERILL.

Ipswich, October 1st, 1846.

SAMUEL SOULE'S STATEMENT.

*To the Committee on Milch Cows and Heifers:*

GENTLEMEN,—The cow which I offer for premium is seven years old, and was raised by Jonathan Osborne, of Danvers. She had her last calf in March last. I bought her May 22d, 1846, and she has given milk since that time as follows:

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| From May | 22d to | 31st, | 10 | days, | 168 | quarts and | 420 | pounds. |
| " June | 1st to | 30th, | 30 | " | 575 | " | 1437½ | " |
| " July | 1st to | 31st, | 31 | " | 501 | " | 1253½ | " |
| " Aug. | 1st to | 31st, | 31 | " | 435 | " | 1087½ | " |
| " Sept. | 1st to | 30th, | 30 | " | 388 | " | 970 | " |
| | | | 132 | " | 2066 | " | 5168½ | " |

Averaging 15 quarts, 1 pint and $1\frac{27}{132}$ gill per day. Her keeping has been grass and hay.

SAMUEL SOULE.

I can attest to the above account as being correct.

BETHIAH TALBUT.

Lynn, October 1st, 1846.

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JAMES MARSH'S STATEMENT.

*To the Committee on Milch Cows and Heifers:*

GENTLEMEN,—I offer for premium my white-face cow, which is eight years old. She calved June 3d, the calf was killed July 10th, and she has given milk as follows: the first two weeks she averaged thirty-two lbs. per day more than the calf would suck; the remaining time till he was killed, sixteen lbs. per day. From July 11th inclusive we have kept an account of her milk by weighing morning and night, which amounts to 2958 lbs. being an average of $36\frac{3}{11}$ lbs. per day. Her keeping has been rather a dry pasture. About the middle of July I commenced giving her two quarts of shorts per day, which as the feed decreased I increased to four quarts, and have since added four quarts of indian meal. Since August our cows have all been fed with green corn planted for that purpose, which is their chief support in the absence of feed.

Yours respectfully,

JAMES MARSH.

Danvers, October 1, 1846.

P. S. Her milk yields butter of a superior quality, so much so that the absence of it affects the quality of our whole dairy.

J. M.

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SAMUEL DANE'S STATEMENT.

*To the Committee on Milch Cows and Heifers:*

GENTLEMEN,—The cow which I enter for premium calved the 6th of September instant, and now gives from eight to ten quarts per day over what the calf sucks. I purchased the cow of Mr. William Black, of Danvers, who states that "the cow has been owned by him the last four years, is perfectly kind and gentle, and gave fourteen and fifteen quarts of milk per day the last summer. She makes first rate butter, which is not over ten minutes in coming."

SAMUEL DANE.

Hamilton, September 30th, 1846.

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MANNING DODGE'S STATEMENT.

*To the Committee an Milch Cows and Heifers:*

GENTLEMEN,—I offer for premium one three year old heifer, which is from a native cow and a Durham bull. She was calved May 31st, 1843, and brought a calf June 2d, 1846, which weighed twenty-six lbs. per quarter when thirty-four days old. She has been kept in a common pasture. When she first calved she gave sixteen quarts of milk per day. She has now fallen away to twelve quarts per day, owing to the shortness of feed.

Yours respectfully,

MANNING DODGE.

Ipswich, September 30th, 1846.

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EBEN. G. BERRY'S STATEMENT.

*To the Committee on Milch Cows and Heifers:*

GENTLEMEN,—The heifer which I offer for your inspection, was

raised in Palermo, Waldo County, in the State of Maine, and was purchased by me, from a drove, the last season. She is three years and two months old, and weighs at the present time 760 lbs. Her calf was sold the last of May, at four weeks old; and the product of her milk is as follows:

| | | |
|---|---|---|
| From June 1st to July 1st, | 787 lbs. | 8 oz. |
| " July 1st to Aug. 1st, | 720 lbs. | |
| " Aug. 1st to Sept. 1st, | 660 lbs. | 12 oz. |
| " Sept. 1st to Oct. 1st, | 592 lbs. | 4 oz. |
| Total, | 2760 lbs. | 8 oz. |

In order to ascertain the quality of her milk, it was set for butter, the three first weeks in June; the result is as follows:

| | |
|---|---|
| From June 1st—1st week, | 7 lbs. 11 oz. |
| 2d week, | 7 lbs. 9 oz. |
| To June 22d—3d week, | 7 lbs. 12 oz. |
| Total, | 23 lbs. |

Her keeping through the season, has been good pasturing, with the addition of mown grass at night, until the first of September. She was then fed with corn stalks, in common with the cows.

EBEN. G. BERRY.

North Danvers, October 1st, 1846.

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## ON TURNING IN CROPS AS A MANURE.

The Committee on Turning in Green Crops respectfully state, that there have been no entries made on this subject. They therefore have concluded to make their report, by presenting some extracts on the subject,* gathered from various sources, accompanied by some

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* A Buckwheat crop was ploughed in. The increase of the wheat crop was more than forty-nine per cent.; that of the rye more than fifty-nine per cent.—*Northampton Courier.*

Manures cannot be conveniently carried to all parts of a large plantation; they should therefore be applied to the fields near where they are made, and the more distant fields must be enriched by green crops. It [Buckwheat] has therefore probably greater facilities for procuring nourishment from the atmosphere than most plants have. It has a

observations, which they hope may not be altogether without interest.

Josiah Little, Esq. of Belleville, a careful observer, a few years since ploughed in a large green crop upon a piece of land containing about five acres, and next year thinks he obtained fifteen bushels of corn to the acre more than he otherwise would.

Several gentlemen have answered, upon enquiry, that the only experience which they have on this subject, is the ploughing in of the stubble upon English grain fields, after the weeds had got some growth, and most or all who have tried it have supposed it a profitable culture.

Moses Newell, Esq., thinks there is much to be gained by ploughing green sward late in the spring after the grass has had time to acquire some growth. He recommends that corn on such land, should be planted as soon as it is broken up.

The Hon. D. P. King made a successful experiment in turning in crops, a few years since. He used buckwheat. His report is not at hand, or we would gladly present his statement.

Another gentleman in the County has for a period of some fifteen

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rapid growth; six weeks in Massachusetts being long enough to bring it in full blossom, when it should be ploughed in.—*Albany Cultivator.*

The practice of turning in green crops dates as far back as the time of the ancient Romans; and is still continued throughout Italy, even in places where the dung of animals can be procured in abundance: and it is there thought that nothing tends more to the improvement of the land than ploughing them in.—*Library of Useful Knowledge.*

Plants, while growing, derive a portion of their food from the air, and being turned in, so far at least, add manure to the soil. But this is not all the benefit: weeds spring up with the sown green crops, and are ploughed in with them, thus increasing the manure, and, at the same time, cleansing the ground for a harvest crop. But besides the growing plants, the soil itself, under their shade, made light by the ploughing and harrowing, is also receiving a portion of the same fertilizing airs.—*Pickering's Address, Oct.* 9, 1822.

The mode of enriching land by ploughing in green crops was practised by the Romans eighteen hundred years ago, and is now in use in England, Italy and other parts of Europe. In this country the practice is very limited, though highly recommended by some of our agricultural writers. In this vicinity, the few attempts to recruit worn-out lands in this way, which have come to our knowledge, have not been very successful and have tended to discourage the practice.—*Hamp. Gazette.*

Ploughing in green crops is in fact only an improved method of hastening the process pursued by nature herself, in the renovation of exhausted soils. By ploughing in a heavy crop of clover, buckwheat or other green substances, we return as much to the soil in a single year as it would otherwise receive in many: and hence the practice of allow-

or twenty years, nearly every season turned in crops upon fields of different sizes and different soils, mostly however of a loose and sandy character, and with a result which encourages him still to continue the practice. For about ten years he kept his garden, containing a quarter of an acre, by this method in a rich and productive state, with the addition of about a cord and a half of manure yearly. He had the weeds covered over at hoeing when this could be done, but when this was inconvenient, they were carried with the small trimmings of the trees, grape and other vines, the foliage of vegetables and other things of like character, to a place devoted to that use, put into a pile and earth thrown over them, where they were suffered to remain till they were suitable for use, which was after the harvest in autumn, or the ensuing spring. During this period, two crops were taken from most of the garden; and what most gardeners will know how to appreciate, the soil, while it grew more productive, still retained in degree the freshness of virgin earth, and gave to the vegetables that peculiar freshness and lively taste admired by all, but not always attainable from lands long cultivated.

He has also brought a field of one acre or more into a productive

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ing lands to rest after a series of cropping, as was once deemed necessary in England and in this country, has been done away by every enlightened agriculturist in both.—*Gen. Farmer.*

I think these green crops improved the land as much as a good dressing of manure, and the comparative expense I estimate at less than one fourth as much to enrich my land with green crops, as it would with manure.—*William Buckminster.*

We should suppose this season to be a very favorable one for ploughing in green crops. Old and worn-out lands, that usually produce but little grass, are more richly covered. Let this be ploughed in, and it will abundantly reward the farmer another season, when it will be more wanted.—*N. Y. Farmer*, 1828.

I had a trench opened of sufficient length to receive six sets of potatoes; under three of these sets I placed green cabbage leaves, but the other three had nothing but the soil. When the crop was dug, the plants over the cabbage leaves yielded about double the produce of the others.—*J. D. Parks, Dartwood Nursery*, 1834.

When the corn was about breast high he ploughed it under, affixing a chain to the whiffletrees to break down the stalks. At the usual time he sowed Timothy seed, and obtained a greater crop of grass than he ever got after clover, buckwheat or other green crops.—*Cultivator.*

At the close of June, 1838, while the sorrel was in blossom, I ploughed it in immediately after a heavy rain, and sowed upon the furrow one bushel of buckwheat per acre. On the 6th and 7th of August, immediately after a rain and while the buckwheat was in blossom, that was also ploughed in. On the 13th of September, it was sown with winter rye. The present season, the striking difference between this rye and that

state, almost exclusively by ploughing in crops, which, when he commenced, was about as thoroughly exhausted by continual cropping, as one can well conceive. The method pursued has been to cultivate two crops—one to be taken off, the other covered in. Rye, oats and buckwheat have been the grains mostly used. One part of the field is now improved as a nursery, and lately the other has been filled out with peach and plum trees, designed for an orchard. These are in a flourishing condition. On the orchard part, corn was planted this year, with no other manure than a very small quantity put in the hill. From the appearance of the stalks and the setting of the ears, a good judge of such things thought there would be a yield of from forty to fifty bushels to the acre, and though from the dryness of the season, the ears did not fill out entirely, there was still what should be regarded as an encouraging harvest. Less than half the manure has been used in producing the change, than would have been necessary, had no other compensating process been adopted.

From these extracts, taken from various sources and from sources entitled to credit, there appears to be a pretty general impression that the use of crops as a manure, is a measure which may be re-

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in the same neighborhood on land of better quality, was seen and remarked by several persons, and some who have known the estate for more than forty years, say that they never before saw such heavy rye on that part.—*John Keely.*

Among the many economical modes of producing geine, the ploughing in of vegetable matter has held a high rank. Nature teaches us to turn in the dried plant. Dried leaves are her favorite morsels, and the very fact that nature takes the dried plant from which to prepare the food of growing vegetables, should have taught us, long ago, the wisdom of ploughing in dry crops. The careful collecting and husbanding of dried leaves, their superior efficacy in forming compost, bear witness to the facts stated in your letter.—*Samuel L. Dana.*

Ploughing in of green crops as practised in the state of New York, is so economical a mode of enriching the soil that I have often marveled that it is not practised to a much greater extent in other places. Allow me to recommend the spreading of a coat of lime previous to ploughing in. If the slovenly farmer who allows his weeds to grow up unmolested and to cover his fields, would, instead of this, plough them under, after a few repetitions of this, he would be surprised at the increased fertility of the soil, and save the labor of carting manure from a distance.—*Junius in the N. Y. Farmer.*

Powerful as are the effects of green crops ploughed in, it is the experience of some practical men that one crop allowed to perfect itself and die where it grew, and then turned in dry, is superior to three turned in green. The whole result is explained by the fact that dry plants give more geine than green. Green plants ferment; dry plants decay: a large portion escapes in fermentation, as gas and more volatile products are formed than during decay.—*Dana's Muck Manual.*

sorted to, with advantage to the agricultural interest. To us, this opinion seems to correspond with the general laws of the material world. God certainly intended that the face of nature should be renewed from year to year—that the hills and vallies should, at every returning season, put on their beautiful garments. More than this, instead of a retrogade or stationary condition, it is evidently the mind of the Creator that there should be an advancement—that every successive development should be more perfect than the one that preceded it. The glory of the latter temple must be greater than that of the first. If nothing comes in to stay the natural course which God has established, there will be, in the productions of each succeeding year, something more than the mere reiteration of the one that precedes it. The appropriate energies which God has given to all parts of his works will work with increasing and extending efficiency, as his purposes go on. The crop that falls and decays upon the earth will more than restore its exhausted strength. The history of the world justifies this representation. The extracts we have made, sustain it in its application to the subject before us, and the more thorough the investigation and the wider the enquiry, the more perfect will be the conviction that God has so arranged his works in the material as in the spiritual world, that there may be constant and observable advancement. The glory of the moon shall become as the glory of the sun, and the glory of the sun as the glory of seven days.

From various statements, and from our own observation, we are of the opinion that the laws of the natural world will be best met, and in consequence the most encouraging results follow, by confining the green crop operation to land comparatively of a sandy and loose soil, and leave the clayey and stiff soils to the enriching and softening influence of the product of the stables and yards where the flocks are folded. Many reasons present themselves to confirm us in this belief. We shall mention only two, and leave those without enlarging upon them. The first is, that vegetables will ferment much more readily and powerfully in sandy and loose soils, than in those of a stiff character, and therefore produce greater chemical changes, and in consequence prepare a greater portion of nourishment for the crop that may come after. The second is, they will thus bring into more active operation the electrical fluid, a most powerful agent in carrying forward vegetable growth. And it may be added, both of these ob-

jects will be more fully accomplished if a very light covering is drawn over the embedded crop, than if it be buried deep in the earth. The field referred to above, has been cultivated almost exclusively with a plough drawn by one horse.

There seems to be a difference in the opinions of those who have written, and perhaps of those who have made personal trial of this method of cultivation, whether it is best to cover the crop when green or suffer it to remain till ripe and after it has become dry, then to turn the furrow upon it. It is the opinion of your Committee that neither should be adopted as a universal practice. On sandy and dry lands, we must think that the crops turned in when green will work the greatest benefit. On clay and stiff lands, the dry may do as well. The season of the year when the work is done, to justify a little variety. In the midst of summer, the crops should be used when green; late in the fall, it may do as well when it is dry. There is one serious objection, which will often operate against working the crop when matured and dry: in most instances the year will be consumed by the process; while, with the other practice, a crop can be raised the same season to be gathered into the store-house or barn. One argument used in favor of dry crops, that it is following out the order of nature, where we see the ripened fruit and the seared leaf, falling to the ground and mixing again with the earth from which they were nourished, and in their own decay, originate the material for the renovation of the beauties and glory of the coming season, might be regarded as sound, if a simple renovation of the faded year was all which God intended to effect by the works he is performing in the earth. But he has other ends to answer, and therefore, if the leaf or plant should loose something of its enriching qualities as it drew near the faded autumn, it may not be spoken of as having failed even in part of the great object which God had in giving life and growth.

In order to account, in a manner at all satisfactory, for all the phenomena connected with this subject, the Committee feel obliged to resort to the opinion that there is in living plants what may be called a self-providing power—a vegetable, or if the term be better liked, a chemical potency; by which, in their urgency, they can transform materials, not before calculated to give them nourishment or support, into food suitable for them to feed upon;—that they can gather for themselves manna in a vegetable wilderness and draw their water from the flinty rock. The manner in which plants, under the

most unpromising circumstances, do live and thrive, is often highly interesting, often truly astonishing, and upon any other principle than that just mentioned, not easy to be accounted for. To this principle, too, may we not safely refer many of those great changes which have often taken place during a long process of cultivation, each successive year producing some changes, which, being carried forward by the successive crops, at length have resulted in a most entire and important alteration, in consequence of which vegetables and fruits grow with luxuriance, where formerly the greatest labor and attention were required to secure to them even a sickly existence ?

Plants do more than simply provide for themselves; they act as it were prospectively, lay up nourishment for those that may come after them. Having seed in themselves, they put up in store for those that are likely to proceed from them. If one crop has been faithfully returned to the earth whence it grew up, the next will come into existence with an increased means of food suited to its nourishment. And because there is much which is common in the elements on which vegetables subsist, should seed of a different kind from that of the preceding year be used, the coming plant would enter upon the harvest already gathered to its hand and enjoy the means of a more vigorous growth because served with the stores gathered by a former generation. Even upon the supposition, credited we believe by most, that a single ingredient necessary to the best development of a particular place may be used up by its long repeated production, it does not certainly follow that the general means of vegetable life, may not at the same time have been accumulating. Were there no other means then, of increasing the productive power of a given soil than a constant tillage and a restoration in such forms as could best be done of what had been taken from it, no one need doubt but that by a careful and scientific cultivation a wilderness might be turned into a fruitful field.

Notwithstanding a very general belief of the advantage to be gained by the kind of culture under consideration, and also the evident support which the general laws of the material universe give to it, the Committee are sensibly struck with the fact, that the method has been tried but by comparatively few in the County. The same observation may be extended to the Commonwealth, and indeed to the nation at large, and that even of those who have once or twice tried it and reported favorably as to the result, almost none have repeated the ex-

periment, certainly have not introduced it into their settled modes of farming. That land may be thus enriched and at a moderate expense, is credited by many, but their faith has not become strong and controlling enough, nor operative enough, to produce much action. The truth needs still to be held up, the subject presented in a more brightening form, the convictions to be made deeper, the benefits more tangible. It is a subject of great and general interest. Its principles apply with equal adaptation to the smallest garden and the largest farm. Its utility is founded in the general and unchanging laws of the material and vegetable universe. In many places it opens almost the only hope that large portions of the earth, and what is more immediately the concern of the Society, large portions of this County, now unsightly because unproductive, will soon, if ever, be clothed with verdure and present to the eyes of a grateful and enlightened community a harvest sufficiently full to take away hunger and want even from the poor.

As it respects the expense of this mode of cultivation, every one can calculate the amount with sufficient accuracy for all practical purposes. The expense of the seed used, and the expense of sowing and ploughing, is the whole. Your Committee, however, think that the expense of ploughing should not be reckoned in, as it is most certain that there is not hardly a field in the whole County that would not, by an increased yield, more than pay for an additional ploughing without any reference to a green crop to be turned in.

In the choice of the kind of grain to be used in this mode of culture, there seems to be but little choice. That kind which from the character of the soil or season of the year, is likely to yield the greatest amount of vegetable material, should be taken. Buckwheat seems to have been the kind more generally used, and perhaps with good reason. Col. Benson, of Bradford, succeeded well with English or white mustard. His lot is of a clayey character.

Too high an estimate cannot be put upon the investigations of science, especially those of chemistry, as a means of helping forward the agricultural interest of the community, yet it cannot be denied that there is many times a discrepancy between the theories which science has formed and the results of experiments made in conformity with them. This fact should not however disparage the importance of such scientific investigation. Demonstration enough has been given of their utility. The only inference that should be drawn from the

fact is, that to whatever extent investigations have been pushed, there still remains a wide and rich field which has not yet been travelled over—much land in the world of knowledge untaken. We may be permitted to add that the discrepancy referred to, calls, in a special manner to deeper investigation of the physiology of plants, and more especially to the assimilating and changing operations wrought upon surrounding materials, by the wonderful powers with which *life* and *growth* appear to have endued them.

A single remark more: the subject, in its several bearings, affords a happy illustration of the ways of God to man. Here we see how he has connected effort with supply, knowledge with success in business; how he encourages an examination of his own works by the high enjoyments which such an investigation must give to a rational soul, and because men are backward to regard the operations of his hands, he has invited them to it by the inceasing prosperity they may obtain thereby. The visible world, in all its bearings, is wonderfully fitted to the necessities of our race. A right occupancy of it leads directly to the development of the physical and mental powers, while a needful attention to the business and labor which his wants make imperative, operates as a most powerful help to man in forming his heart and life aright.

Respectfully submitted,

GARDNER B. PERRY, Chairman.

Bradford, December 3d, 1846.

*Dr.* *William Sutton, Treasurer, in account with the Essex Agricultural Society,* *Cr.*

| | | |
|---|---|---|
| 1845. | | |
| September. | To Balance of former account, | $215 96 |
| October. | To Bank Dividends, | 201 75 |
| Dec. 17. | To State Bounty, | 600 00 |
| 1846. | | |
| April 14. | To Bank Dividends. | 228 50 |
| June 20. | To amount received of new Members, | 33 00 |
| Sept. 29. | To Interest on Mortgage, | 30 00 |
| | To Premiums unclaimed, | 54 50 |
| | | $1363 71 |

| | | |
|---|---|---|
| 1845. | | |
| Sept. 27. | By amount Premiums and Gratuities awarded by Trustees, | $518 75 |
| | By amount paid for Washington's Letters, | 30 00 |
| | By amount paid for Colman's Books, | 75 00 |
| | By Expenses, as follows: | |
| | Exhibition, 1845, | 66 52 |
| | Secretary, | 50 00 |
| | Printing, | 168 55 |
| | Postage, | 6 47 |
| | | 291 54 |
| | By Cash on hand, | 418 42 |
| | | $1363 71 |

## FUNDS BELONGING TO THE SOCIETY.

| | | | | |
|---|---|---|---|---|
| 16 | Shares in Warren Bank, | cost | | $1596 00 |
| 12 | " Exchange " | par | | 300 00 |
| 21 | " Commercial " | cost | | 1411 66 |
| 7 | " Mercantile " | par | | 700 00 |
| 6 | " Merchants " | par | | 300 00 |
| 5 | " Village " | par | | 500 00 |
| 3 | " Salem " | par | | 300 00 |
| 6 | " Danvers " | cost | | 571 25 |
| 12 | Shares in Lynn Mechanics Bank, | cost | | $660 00 |
| | Notes receivable, | | | 927 36 |
| | Cash on hand, as above, | | | 418 42 |
| | Funds on hand in 1846, | | | 3134 69 |
| | " " 1845, | | | 7932 23 |
| | | | Increase of funds, | $202 46 |

SALEM, September 29, 1846. [E. E.] WILLIAM SUTTON, TREASURER.

SALEM, Nov. 30, 1846. We have examined the foregoing Account of the Treasurer, and find the same correctly cast and well vouched.

F. HOWES,
A. HUNTINGTON, } Committee.

# LIST OF

# PREMIUMS AND GRATUITIES

## AWARDED IN 1846.

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PLOUGHING — DOUBLE TEAMS.

| | | |
|---|---|---|
| Daniel P. King, of Danvers, | 1st premium, | $10 00 |
| Edwin Upton, Salem, | 2d " | 8 00 |
| Philip Marsh, Danvers, | 3d " | 6 00 |
| John G. Walcut, " | 4th " | 4 00 |

PLOUGHING — SINGLE TEAMS.

| | | |
|---|---|---|
| Joseph C. Putnam, Danvers, | 1st premium, | 8 00 |
| Moses Pettingill, Topsfield, | 2d " | 6 00 |
| Jacob P. Goodale, Danvers, | 3d " | 4 00 |
| Farnham Spofford, Andover, | 4th " | 2 00 |

PLOUGHING — HORSE TEAMS.

| | | |
|---|---|---|
| Jacob Brown, Ipswich, | 1st premium, | 8 00 |
| C. A. Stetson, Lynn, | 2d " | 6 00 |
| Seth Holden, Salem, | 3d " | 4 00 |

WORKING OXEN.

| | | |
|---|---|---|
| John Hathaway, Danvers, | 1st premium, | 10 00 |
| Jacob Galucia, Salem, | 2d " | 7 00 |
| Joseph Horton, Ipswich, | 3d " | 5 00 |
| B. W. Crowninshield, Topsfield, | gratuity, | * |

STEERS — 2 YEARS OLD.

| | | |
|---|---|---|
| Benjamin Poore, West Newbury, | 1st premium, | 6 00 |

FAT CATTLE.

| | | |
|---|---|---|
| Joseph Towne, Topsfield, | gratuity, | 10 00 |

BULLS.

| | | |
|---|---|---|
| J. H. Coggshall, Lynn, | 2d premium, | 6 00 |
| John Mason, Salem, | 3d " | 4 00 |

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* Colman's European Agriculture.

MILCH COWS.

Warren Averill, Ipswich, 1st premium, - - - - 10 00
Samuel Soule, Lynn, 2d " - - - - 7 00
James Marsh, Danvers, 3d " - - - - 5 00
Samuel Dane, Hamilton, 4th " - - - - *

HEIFERS—IN MILK.

Manning Dodge, Ipswich, 1st premium, - - - 7 00
Ebenezer G. Berry, Danvers, 2d " - - - - 5 00

HEIFERS—NOT IN MILK.

Benjamin Poore, West Newbury, gratuity, - - - 3 00
Ebenezer Butterfield, Saugus, " - - - 2 00

SHEEP.

William Parker, Saugus, Cosset and Lambs, gratuity, - 1 00

JUNE BUTTER.

Jonathan Berry, Middleton, 1st premium, - - - 10 00
Ezra Dodge, Wenham, 2d " - - - 8 00

SEPTEMBER BUTTER.

Allen W. Dodge, Hamilton, 1st premium, - - - 10 00
George W. Dodge, Wenham, 2d " - - - 8 00
Jonathan Berry, Middleton, 3d " - - - 6 00
John W. Cole, Topsfield, 4th " - - - *

IMPROVED AGRICULTURAL IMPLEMENTS.

Jas. Porter, Lynn, Harness to prevent cows sucking themselves, 3 00

MANAGEMENT OF FARMS.

Jonas Holt, Andover, 2d premium, - - - 20 00

RECLAIMED MEADOW LAND.

James Marsh, Danvers, 1st premium, - - - 15 00

NURSERIES OF FRUIT TREES.

Ephraim Woods, Salem, 1st premium, - - - 10 00
William G. Lake, Topsfield, 2d " - - - - 8 00
James B. Cole, Beverly, 3d " - - - †

BEAN CROP.

C. H. Holmes, Topsfield, gratuity, - - - - 5 00

FRUITS.

R. Manning, - - - - - - - - 2 00
John M. Ives, - - - - - - - - 2 00
Joseph S. Cabot, - - - - - - - 2 00
Otis Johnson, - - - - - - - - 2 00

* Colman's European Agriculture. † Washington's Letters on Agriculture.

| | |
|---|---|
| Ebenezer Browne, | $1 50 |
| G. W. Oliver, | 1 00 |
| J. Oliver, | 1 00 |
| M. Pettingill, | 1 00 |
| A. Dodge, | 1 00 |
| R. Mudge, | 1 00 |
| J. S. Sanderson, | 75 |
| J. Webster, | 75 |
| H. A. Breed, | 75 |
| W. G. Lake, | 75 |
| Andrews Breed, | 50 |
| J. B. Johnson, | 50 |
| E. Johnson, | 50 |
| Nathan Breed, | 50 |
| Dr. Nye, | 50 |
| Alfred Peabody, | 50 |
| J. Ober, | 50 |
| Samuel Putnam, | 25 |
| E. F. Dodge, | 25 |
| E. Neal, | 25 |
| C. D. Holmes, | 25 |
| R. Johnson, | 25 |
| Isaac Childs | 25 |
| D. N. Breed, | 25 |
| J. B. Gould, | 25 |
| Joseph Breed, | 25 |
| Cyrus Hoten, | 25 |
| Samuel Tufts, | 25 |
| D. Moulton, | 25 |
| J. Berry, | 25 |
| J. Daley, | 25 |
| J. Alley, 3d, | 25 |
| J. Marsh, | 25 |
| F. Tudor, | 25 |
| J. Tuttle, | 25 |
| Isaiah Breed, | 25 |
| William Preston, | 25 |
| J. Brown, | 25 |
| Josiah Newhall, | 25 |

FLOWERS.

| | | | |
|---|---|---|---|
| Mr. West, Salem, | Pyramidal Boquet, | | $1 00 |
| Miss Bowler, | do. | do. | 50 |
| Miss Brown, | do. | do. | 50 |
| Miss Eames, | | do. | 50 |
| Miss Ingalls, | | do. | 50 |
| Miss Connor, | Pyramid of Flowers, | | 50 |
| Mrs. R. Mudge, | do. | do. | 50 |
| Mrs. S. Newhall, | do. | do. | 25 |
| Miss S. R. Ives, | do. | do. | 25 |
| Mrs. Parsons, | do. | do. | 25 |

VEGETABLES.

| | | |
|---|---|---|
| L. Wait, | Ipswich, | 1 00 |
| Abel Burnham, | Essex, | 1 00 |
| N. D. Chase, | Lynn, | 50 |
| William Coggshall, | | 50 |
| Josiah Newhall, | | 50 |
| Jonas Holt, | | 25 |
| William Abbott, | | 25 |
| Albert Hill, | | 25 |
| William Mansfield, | | 25 |
| Winthrop Newhall, | | 25 |
| Frederic Needham, | | 25 |
| Samuel Putnam, | | 25 |
| William Osborne, | | 25 |
| J. P. Woodman, | | 25 |
| William P. Carlton, | | 25 |

RUGS AND MATS.

| | | | |
|---|---|---|---|
| Mrs. Nancy Bailey, | Beverly, | 1st premium, | 3 00 |
| Anna Chamberlain, | " | 2d " | 2 00 |
| Mrs. W. Butler, | Newburyport, | gratuity, | 1 00 |
| Mrs. D. B. Oliver, | " | " | 1 00 |
| Mrs. Hannah P. Berry, | Danvers, | " | 1 00 |
| Mrs. T. I. Pratt, | Lynn, | " | 1 00 |

CARPETING.

| | | | |
|---|---|---|---|
| Perley Tapley, | Danvers, | Stair Carpet, 1st premium, | 3 00 |
| Sally E. Sheldon, | Beverly, | do. gratuity, | 1 00 |
| Perley Tapley, | Danvers, | Ingrain Carpets, 1st premium, | 5 00 |

Mrs. John Pearson, Newbury, Rag Carpet, 2d premium, $3 00
Mrs. Latty Pease, Salem, 66 years of age, Rag Carpet, gratuity, 1 00

COUNTERPANES.

Mrs. S. J. Ireson, Lynn, 1st premium, - - - 4 00
Mrs. Sarah J. Barry, " 2d " - - - 2 00
Miss Lucy B. Newhall, gratuity, - - - 1 00
Harriet A. Goodrich, Lynn, " - - - 1 00
M. E. Johnson, " " - - - 1 00
A young lady of Salem, Counterpane, gratuity, - - 1 00
Miss Matilda Osgood, Salisbury, Knit Quilt, gratuity, 1 00

CLOTH AND HOSIERY.

Miss Judith Pickett, Beverly, 87 years old, Knit Gloves, gratuity, 1 00
Sarah S. Bradstreet, 4 years old, Woollen Hose, " 1 00

BOOTS AND SHOES.

Samuel P. Spofford, Brogans, 1st premium, - - 3 00
W. S. Horner, do. 2d " - - - 2 00
Amos Gould, Thick Boots, 1st " - - 3 00
Waldo Thompson, do. 2d " - - - 2 00
J. Wait & Sons, Calf Shin Boots, 1st premium, - - 4 00
Charles Dickinson, do. do. 2d " - - 2 00
Thomas P. Richardson, Gaiter Boots, gratuity, - - 1 00
Harrison Newhall, do. Shoes, " - - 1 00
N. A. Breed, Child's Boots, " - - 1 00
N. A. Breed, do. Shoes, " - - 50
N. A. Breed, Boy's Pumps, " - - 1 00
Nathan Kimball, Gaiter Boots, " - - 1 00
Nathan Kimball, Satin Slips, " - - 1 00
Nathan Kimball, Patent Leather Slips, " - - 1 00
Moses Spofford, Shoe Strings, " - - 50

MISCELLANEOUS ARTICLES.

Barry & Bigelow, Lynn, House Papers, - - - - 3 00
Smith & Chamberlain, Salem, Jewelry, - - - 2 00
Thomas Tennet, Newburyport, Surveying Protractors, - 2 00
Mrs. D. Farrington, Lynn, Chair Covering, - 50
James F. Nourse, aged 9 years, Lynn, Lamp Mats, - - 50
Miss E. H. Whitney, Danvers, Lamp Mat, - - 25
Sarah E. Lummus, Ipswich, Work Bag, - - 25
Jos. A. Potter, aged 8 years, Salem, Artificial Fruit & Flowers, 1 00

| | |
|---|---|
| S. H. Moore, Lynn, Centre Table Basket, | $0 75 |
| Joseph Edwards, Lynn, Tailor's Crayons, | 50 |
| Miss A. L. Nourse, Beverly, Chair Covering, | 75 |
| Laura S. Dodge, Hamilton, Travelling Bag, | 50 |
| Mrs. Twisden, 88 years old, Lynn, Cotton Shirt, | 50 |
| Louisa Lander, Danvers, Crayon Drawings, | 75 |
| Maria L. Fowler, " Wrought Fire Screen, | 25 |
| Susan M. Perley, Georgetown, Travelling Bag, | 25 |
| Henry Moulton, Salem, Large Baskets, | 50 |
| Theophilus N. Breed, Lynn, Shoemakers' and other Tools, | 2 00 |
| George Hastings, Georgetown, Polished Steel Garden Rake, | 25 |
| David Stiles, Middleton, Horse Shoes, | 50 |
| S. Oliver, Boy's Rockaway Coach, | 1 00 |
| Sarah Ellen Hale, 11 years old, Salem, Lamp Mat, | 50 |
| Susan D. Breed, Lynn, Lamp Mats and Ottomans, | 1 00 |
| Miss M. J. Roundy, Beverly, do. wrought with beads, | 1 00 |
| Lydia Lamboard, Lynn, Lamp Mat and Flowers, | 50 |
| Eliza J. Brown, " Crayon Drawings, | 50 |
| Sarah F. Bradstreet, 4 years old, Beverly, Worsted Purse, | 50 |
| Adaline B. Ames, Lynn, Table Covering, | 50 |
| Susan Perley, aged 11 years, Georgetown, Table Covering, | 2 00 |
| Mary R. Kimball, Salem, Sofa Pillows, | 50 |
| Miss W. H. Allen, Manchester, Fire Screens, | 1 00 |
| Mrs. Isaac Newhall, Lynn, Tabourett, | 50 |
| Mrs. Margaret H. Felt, Salem, Tabourett, | 25 |
| Mrs. Cox, Salem, fine specimen of Worsted Work, | 50 |
| Miss Almira P. Perley, North Danvers, Ottomans, | 50 |
| | $381 50 |

ALLEN W. DODGE, Secretary.

Hamilton, December 4th, 1846.

# OFFICERS OF THE SOCIETY,

CHOSEN OCTOBER 1, 1846.

JOHN W. PROCTOR, of Danvers, *President.*

DANIEL ADAMS. Jr., of Newbury,
SOLOMON LOW, of Boxford,
ASA T. NEWHALL, of Lynnfield,
ROYAL A MERRIM, of Topsfield,
} *Vice Presidents.*

WILLIAM SUTTON, of Salem, *Treasurer.*

ALLEN W. DODGE, of Hamilton, *Secretary.*

## TRUSTEES.

| | | | |
|---|---|---|---|
| Lewis Allen, | Danvers. | John M. Ives, | Salem. |
| Jedediah H. Barker, | Andover. | Josiah Kimball, | Boxford. |
| Jacob Brown, | Ipswich. | Joseph Kittredge, | Andover. |
| Hobart Clark, | Andover. | Daniel P. King, | Danvers. |
| Wm. N. Cleaveland, | Topsfield. | John Marland, | Andover. |
| Jeremiah Colman, | Newburyport. | Moses Newell, | W. Newbury. |
| Andrew Dodge, | Wenham. | Josiah Newhall, | Lynnfield. |
| James H. Duncan, | Haverhill. | Asa Nelson, | Georgetown. |
| Nathaniel Felton, | Danvers. | Andrew Nichols, | Danvers. |
| Moses French, | Salisbury. | John Northend, | Newbury. |
| George Hood, | Lynn. | Gardner B. Perry, | Bradford. |
| Joseph Howe, | Methuen. | Dean Robinson, | W. Newbury. |
| Frederic Howes, | Salem. | Horace Ware, | Marblehead. |

## MEMBERS ADMITTED IN 1846.

| | | | |
|---|---|---|---|
| Joseph Brown, | Danvers. | Moses P. Atwood, | Bradford. |
| Jonas Holt, | Andover. | Moses L. Atkinson, | Merrimack. |
| Ebenezer Brown, | Lynn. | John P. Webber, | Beverly. |
| John Perkins, | Lynnfield. | Richard P. Waters, | Beverly. |

☞Any citizen of the County may become a member of the Society, by paying to the Treasurer three dollars. All ordained Ministers of the Gospel who reside within the County, are admitted honorary members of the Society. Members are not liable to any assessment. Each member is entitled to a copy of the Transactions of the Society.

# PREMIUMS OFFERED

BY THE

# ESSEX AGRICULTURAL SOCIETY,

FOR

# 1847.

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## I. MANAGEMENT OF FARMS.

For the most extensive, valuable and economical improvements in the cultivation and management of an entire farm, with all its appendages, within the last *five years*,

1st premium, - - - twenty-five dollars.
2d premium, - - - - twenty dollars.
3d premium, - - - ten dollars.

☞ The Trustees have varied their statement of premiums offered for *entire farms*, in the hope of increasing the number of competitors. They have also determined to admit as competitors, all farms within the County, whether large or small, for which the *first premium* has not been awarded within *seven years*. A detailed statement of the management and produce will be expected by the 15th of November.

Notice of intention to claim these premiums must be given to the Secretary on or before the 20th of June.

The Committee will visit such farms as may be entered, in July and September.

## II. DAIRY.

1. For the best produce of butter on any farm within the County of Essex, from the 1st of June to the 9th of July, inclusive, in the present year, a sample not less than twenty-five pounds to be exhibited, with a particular statement of the number of cows, quantity of butter, method of making and preserving it, &c., &c.,

1st premium, - - - ten dollars.
2d premium, - - - - eight dollars.
3d premium, - - - six dollars.
4th premium, - - Colman's European Agriculture.

2. For the best produce of butter on any farm within the County of Essex, in the four months next following the 20th of May, the present year, a sample of not less than twenty-five pounds to be exhibited—*quantity* as well as *quality* to be taken into view; with a full account of the manner of feeding the cows, and the general management of the milk and butter,

1st premium, - - - ten dollars.
2d premium, - - - eight dollars.
3d premium, - - - six dollars.
4th premium, - - Colman's European Agriculture.

NOTE.—It will be observed that these premiums are offered for the *best produce on the farms*, and not simply for the best specimen exhibited. Claimants will therefore be required to be particular in keeping an account, and preparing a statement of the entire produce, within the times mentioned.

## III. TURNING IN CROPS AS A MANURE.

For the most satisfactory experiment of turning in crops as a manure, either *green* or *dry*, on not less than one acre of land, a detailed account of the whole process to be given in writing,

1st premium, - - - ten dollars.
2d premium, - - - - five dollars.

## IV. FOREST TREES.

1. For the best plantation of either of the following species of forest trees, viz: white oak, yellow oak, locust, birch, white ash, maple or walnut, not less than three years old, and not less than one thousand trees, - - - - twenty dollars.

2. For the best do. do. do. not less than six hundred trees, ten dollars.

NOTE.—For an explanation of these premiums, see remarks in former years.

## V. IRRIGATION.

For the most satisfactory experiment for increasing the crops, upon not less than one acre of land, by irrigation, with a detailed account of the manner, expense, and benefits produced, twelve dollars.

For the second best, - - - ten dollars.

## VI. IMPROVING WET MEADOW OR SWAMP LANDS.

For the best conducted experiment in reclaiming wet meadow or swamp lands, on not less than one acre, the course of management and the produce, &c., for a period of two years, at least, to be detailed, with a statement of all incidental expense, twenty dollars.
For the second best, - - - fifteen dollars.
For the third best, - - - - ten dollars.
For the fourth best, - Colman's European Agriculture.

## VII. PLOUGHING.

1. Double Teams.—For the best performance in ploughing, at least one sixth of an acre, *seven* inches deep, ten dollars.
For the second best, - - - eight dollars.
For the third best, - - - - six dollars.
For the fourth best, - - - four dollars.

2. Single Teams.—For the best performance in ploughing, at least one eighth of an acre, *six* inches deep, eight dollars.
For the second best, - - - six dollars.
For the third best, - - - - four dollars.
For the fourth best, - - - two dollars.

3. Horse Teams.—For the best performance in ploughing, with horses, - - - - - eight dollars.
For the second best, - - - six dollars.
For the third best, - - - four dollars.
For the fourth best, - - - two dollars.

4. Sub-soil Ploughing.—For the best performance in sub-soil ploughing, - - - - ten dollars.
For the second best, - Colman's European Agriculture.

Note.—A team consisting of a horse and one pair of oxen will be considered a double team. No team or plough which has taken a premium of this Society will be entitled to another, except of a higher grade. The competitors for these premiums, must be the owners of the team, and the same must be entered in the name of the owner. Those who intend to be competitors, must give notice to the Secretary, or his agent, on or before the Monday next previous to the Exhibition.

## VIII. EXPERIMENTS IN SUB-SOIL PLOUGHING.

For the most satisfactory experiment on not less than one acre of land, of the effect of sub-soil ploughing, to be determined by the difference of the value of the crops raised on equal portions of equally manured land of equal quality, one half of which, having been sub-soil ploughed, the other half ploughed in the usual manner. Statements of the depth of ploughing in each instance, together with all the particulars of culture, required,

1st premium, - - - - ten dollars.
2d premium, - - - eight dollars.

## IX. IMPROVEMENT OF AGRICULTURAL IMPLEMENTS.

To the person who shall exhibit at the show any new or improved agricultural implement, the invention being his own, which shall, in the opinion of the Trustees, merit a reward, a premium shall be given, not exceeding ten dollars.

## X. COMPARATIVE VALUE OF CROPS, AS FOOD FOR CATTLE.

1. For the most satisfactory experiment upon a stock of cattle, not less than four in number, in ascertaining the relative value of the different kinds of fodder used, with a statement in detail of the quantity and value of the same, as compared with English hay, the experiment to be made in the three winter months,

1st premium, - - - fifteen dollars.
2d premium, - - - - ten dollars.

2. For the most satisfactory experiment, proving the comparative value of the crop of cultivated grasses, cut at different periods of their growth, whether they be worth more or less for feeding or fattening cattle, cut in the blossom, or when the seed is fully formed, or when fully ripe, taking into view the effect of cutting these grasses at the different periods above mentioned, on the land itself and on subsequent crops, - - - - fiifteen dollars.

These premiums are offered, to be paid whenever a meritorious claim is presented; and will be continued until awarded.

## XI. EXPERIMENTS ON MANURES.

1. For an exact and satisfactory experiment in the preparation

and application of manures, either animal, vegetable or mineral, first premium, - - - - - fifteen dollars.
2d premium, - - - - ten dollars.
3d premium, - Colman's European Agriculture.

## XII. CULTIVATION OF WHEAT, RYE, OATS, BARLEY, INDIAN CORN, &c.

1. For the best conducted experiment of *Wheat*, not less than twenty bushels to the acre, on not less than one acre, eight dollars.

2. For the best conducted experiment of *Rye*, not less than thirty bushels to the acre, on not less than one acre of land, eight dollars.

3. For the best conducted experiment of *Oats*, not less than fifty bushels to the acre, on not less than one acre of land, eight dollars.

4. For the best conducted experiment of *Barley*, not less than forty bushels to the acre, on not less than one acre of land, eight dollars.

5. For the best conducted experiment of *Indian Corn*, not less than eighty bushels to the acre, on not less than one acre of land, eight dollars.

6. For the best conducted experiment in raising a mixed crop of *Corn* and *Potatoes*, or mixed grain, and not less in value than eighty bushels of corn, on not less than one acre of land, eight dollars.

7. For the best conducted experiment of *White Beans*, on not less than one half acre of land, eight dollars.

## XIII. FATTENING CATTLE AND SWINE.

For the most satisfactory experiment in feeding cattle or swine, with a statement in detail, of the process and the result,
1st premium, - - - - ten dollars.
2d premium, - - - - - five dollars.

## XIV. ROOT CULTURE.

For the best conducted experiment in raising Sugar Beets, six dollars.
For the best conducted experiment in raising Carrots, six dollars.
For the best conducted experiment in raising Parsnips, six dollars.
For the best conducted experiment in raising Ruta Baga, six dollars.
For the best conducted experiment in raising Mangel Wortzel, six dollars.

For the best conducted experiment in raising Onions, six dollars.

Raised on not less than one half acre of land, and the quantity of the crops to be ascertained by weight.

☞ Claimants for all the above premiums, will be required to give a statement of the previous condition of the land, the comparative value of the land, the value of labor and manure applied, the produce, the manner of preparing the ground, the seed used, the harvesting, &c., including all the details in relation to the crops; the same to be forwarded to the Secretary, previous to the 15th of November.

## XV. ANIMALS,

TO BE PRODUCED AT THE EXHIBITION, ON WEDNESDAY, SEPTEMBER 29TH, 1847.

TO BE ENTERED IN THE NAME OF THEIR PROPER OWNERS—WHO MUST HAVE HAD THEM SIX MONTHS BEFORE EXHIBITION.

### FAT CATTLE.

For the best pair of oxen, fatted within the County, regard being had to the manner of feeding and the expense thereof, fifteen dollars.

For the best ox, do. do. - - - ten dollars.

For the second best, - - - eight dollars.

For the third best, - - - five dollars.

### BULLS.

For the best bull, not less than one year old, on satisfactory assurance being given that he shall be kept for use in the County, at least nine months from the day of exhibition, - eight dollars.

For the second best, - - - - six dollars.

For the third best, - - - four dollars.

### MILCH COWS.

For the best milch cow, not less than three, nor more than ten years old, with satisfactory evidence as to the quantity and quality of her milk and the manner in which she has been fed, ten dollars.

For the second best, - - - seven dollars.

For the third best, - - - - five dollars.

For the fourth best, - Colman's European Agriculture.

### HEIFERS.

For the best heifer that has been in milk three months or more,

with satisfactory evidence as to the quantity and quality of her milk, - - - - - - seven dollars.
For the second best, - - - five dollars.
For the best two year old heifer, - five dollars.
For the second best, - - - three dollars.
For the best yearling heifer, - - five dollars.
For the second best, - - - three dollars.

WORKING OXEN.

For the best pair of working oxen, not over seven years old, taking into view their size, power and training, - ten dollars.
For the second best, - - - seven dollars.
For the third best, - - - five dollars.

NOTE.—In testing the power of working cattle, four years old or more, the load is not to exceed *two tons;* under four years old, it is to be *one ton.*

STEERS.

For the best pair of three year old steers, do. seven dollars.
For the second best, - - - five dollars.
For the best pair of two year old steers, - six dollars.
For the second best, - - - four dollars.
For the best pair of yearling steers, - four dollars.
For the second best, - - - two dollars.

COLTS.

For the best four year old colt, raised within the County, ten dollars.
For the best three year old do. do. - eight dollars.
For the best two year old do. do. - - six dollars.
For the best yearling do. do. - - four dollars.

SWINE.

For the best boar, - - - five dollars.
For the second best, - - - two dollars.
For the best breeding sow, - - five dollars.
For the second best, - - - three dollars.
For the best litter of weaned pigs, not less than *four*, from two to six months old, - - - - - six dollars.
For the second best, - - - three dollars.
For the best weaned pig, from two to six months old, four dollars.
For the second best, - - - two dollars.

SHEEP.

If any sheep are entered, they will receive such premium as the Committee may recommend to be awarded.

NOTE.—All animals that come more than ten miles, whether teams for ploughing, or animals entered for premiums or exhibition, will be fed the night previous to the exhibition, at the expense of the Society.

## XVI. FRUIT TREES.

For the best nursery of fruit trees, not less than five hundred in number, raised from the seed, and one or more years old from the bud or graft, first premium, - - - ten dollars.

2d premium, - - - - eight dollars.

3d premium, - Washington's Letters on Agriculture.

For the best apple orchard, not less than seventy-five trees, which shall have been planted or set out since the year 1845, and shall be in the best thriving state in 1849, first premium, ten dollars.

2d premium, - - - - eight dollars.

3d premium, - - - - four dollars.

For the best engrafted or budded pear trees, not less than twenty-five trees, set out since the year 1845, and in the best thriving state in the autumn of 1849, first premium, - ten dollars.

2d premium, - - - - five dollars.

For the best peach orchard, not less than fifty trees, set out since the year 1845, and which shall be in the best thriving state in the autumn of 1847, first premium, - - ten dollars.

2d premium, - - - - five dollars.

## XVII. CRANBERRIES.

For the best experiment on the cultivation of the cranberry, on not less than half an acre of land, the quantity, quality and expense of culture being taken into consideration, to be paid in 1847, 1848 and 1849, - - - - - fifteen dollars.

For the best experiment do. on not less than one quarter of an acre of land, - - - - ten dollars.

For the best do. do. on not less than two rods of land, five dollars.

## XVIII. EXTERMINATING WEEDS.

For the best practical experiment on exterminating wood waxen,

(*genista tinctoria*,) Canada thistles, and other weeds or plants destructive to the value of pasture lands, - fifteen dollars.
For the second best, - - - ten dollars.

## XIX. DOMESTIC MANUFACTURES.

For the best piece of carpeting, a yard wide, and not less than twenty yards to be exhibited, - - five dollars.
For the second best do. - - - three dollars.
For the best piece of stair carpeting, not less than twenty yards to be exhibited, - - - - three dollars.
For the best straw or grass bonnet, - five dollars.
For the second best do. - - - three dollars.
For the best wrought hearth rug, having regard both to the quality of the work and the expense of the material, three dollars.
For the second best do. - - - two dollars.
For the best piece of woollen cloth, seven-eighths of a yard wide, and twenty yards in quantity, - - five dollars.
For the second best do. - - three dollars.
For the best piece of flannel, a yard wide, and twenty yards in quantity, - - - - - four dollars.
For the second best do. - - two dollars.
For the best wrought woollen hose, not less than four pair, two dollars.
For the second best do. - - one dollar.
For men's best half hose, not less than four pair, one dollar.
For the best silk hose, not less than three pair, two dollars.
For the best piece of linen cloth, not less than twenty yards, four dollars.
For the second best do. - - two dollars.
For the best piece of linen diaper, not less than twenty yards, four dollars.
For the second best do. - - two dollars.
For the best wrought counterpane, having regard to the quality and expense of the materials, - - - four dollars.
For the second best do. - - two dollars.
For the best specimen of wrought lace, - three dollars.
For the second best do. - - two dollars.
For the best specimen of work performed by a child under twelve years of age, exhibiting industry and ingenuity, three dollars.

For the second best do. - - two dollars.
For the best pair of thick boots, - - three dollars.
For the second best do. - - two dollars.
For the best pair of calf-skin thin boots, - four dollars.
For the second best do. - - two dollars.
For the best pair of thick brogan shoes, - two dollars.
For the best pair of calf-skin shoes, - two dollars.
For the best pair of ladies' walking shoes, - two dollars.
For the best pair of ladies' kid or morocco slippers, one dollar.
For the best specimen of shell combs, not less than one dozen, five dollars.
For the best specimen of horn combs, not less than one dozen, three dollars.

And should other articles of domestic manufacture be exhibited, worthy of attention, a proper notice will be taken of them, and suitable gratuities awarded. The whole amount not to exced one hundred dollars. *But no premium or gratuity will be awarded for any article manufactured previously to the last Exhibition of the Society.*

## XX. FRUITS AND FLOWERS.

Convenient rooms will be provided for the exhibition of fruits and flowers, and committees will be appointed to examine and report on such as may be presented. Whoever may present, is requested to furnish a minute in writing, of the name of the owner, and description of the article presented. The committees will be instructed to recommend such gratuities as the articles may seem to merit, not exceeding in amount the sum of fifty dollars, by the committee on fruit; and seven copies of Washington's Letters on Agriculture, by the committee on flowers.

## XXI. ESSAYS.

For any essay on any of the above subjects for which premiums are offered, which may be considered by the Trustees worthy of publication, - - - - ten dollars.

## GENERAL REMARKS.

All claims for premiums, to be awarded on the day of exhibition,

must be entered with the Secretary of the Society, or his agent, on or before 9 o'clock, A.M., of that day.

All other claims for premiums, must be handed or forwarded to the Secretary, in writing.

All premiums awarded, the payment of which is not demanded of the Treasurer within *one year* from the day of the exhibition, will be considered as given to increase the funds of the Society.

No animal or object for which a premium has heretofore been awarded by the Society, will be entitled to another premium, unless it be of a higher order, or for qualities different from those for which the former premiums were awarded.

No person will be entitled to receive a premium, unless he complies with the conditions on which the premiums are offered; and *gives notice as required*, of his intention to claim the same.

No *gratuities* will be awarded, except for domestic manufactures and for fruits and flowers, unless specially ordered by the Trustees.

In regard to all subjects for which premiums are offered, it is to be distincly understood, that the Trustees reserve to themselves the right of judging of the QUALITY of the animal or article offered; and that no premiums will be awarded, unless the objects of them are of a decidedly SUPERIOR QUALITY.

By order of the Trustees,

ALLEN W. DODGE, *Secretary.*

January, 1847.

# INDEX.


| | |
|---|---|
| Mr. Newell's Address, | 3 to 17 |
| Original Hymn by G. Lunt, Esq., | 19 |
| Report on Ploughing with Double Teams, | 21 to 23 |
| Report on Ploughing with Single Teams, | 24 to 25 |
| Report on Ploughing with Horse Teams, | 25 to 26 |
| Report on Swine, | 26 to 31 |
| Report on Meadow and Swamp Land, | 31 to 33 |
| Statement of James Marsh, | 33 to 34 |
| Letter of E. M. Stone, | 35 to 37 |
| Statement of Samuel C. Pitman, | 37 to 38 |
| Report on Farms, | 39 |
| Statement of Jonas Holt, | 40 to 41 |
| Report on Steers, | 41 |
| Report on Bulls, | 42 |
| Report on Fat Cattle, | 43 |
| Report on the Dairy, | 43 to 44 |
| Statement of Jonathan Berry, | 44 |
| Statement of Ezra Dodge, | 44 |
| Statement of Allen W. Dodge, | 45 |
| Statement of George W. Dodge, | 45 |
| Statement of John K. Cole, | 46 |
| Report on Working Oxen, | 47 |
| Report on Fruits, Flowers and Vegetables, | 48 to 49 |
| Report on Fruit Trees, | 50 to 52 |
| Report on Agricultural Implements, | 53 to 55 |
| Communication on the Uses of Salt in Cultivation, | 55 to 57 |
| Report on Grain Crops, | 57 |
| Statement of C. H. Holmes, | 58 to 59 |
| Reports on Domestic Manufactures, | 59 to 63 |
| Report on Milch Cows and Heifers, | 63 to 68 |
| Statement of Warren Averill, | 68 |
| Statement of Samuel Soule, | 69 |
| Statement of James Marsh, | 69 |
| Statement of Samuel Dane, | 70 |
| Statement of Manning Dodge, | 70 |
| Statement of E. G. Berry, | 71 |
| Essay on turning in crops as a manure, | 71 to 79 |
| Treasurer's Statement. | 80 |
| List of Premiums and Gratuities, 1846, | 81 to 86 |
| Officers of the Society, | 87 |
| Members admitted in 1846, | 87 |
| Premiums offered for 1847, | 88 to 98 |

# TRANSACTIONS

OF THE

# ESSEX AGRICULTURAL SOCIETY,

FOR

# 1847.

PUBLISHED BY ORDER OF THE SOCIETY.

DECEMBER, 1847.

DANVERS:
PRINTED AT THE COURIER OFFICE.
1847.

# MR. PAYSON'S ADDRESS.

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Mr. President,

We somewhere read of a Roman citizen, whose income from a small farm and garden, greatly exceeded that of his neighbors from their ample possessions. Envious of his prosperity, they brought this accusation against him—that by Sorcery and Witchcraft, he had transported the fertility and increase of his neighbor's fields into his own. A peremptory summons called him before the assembled tribes, and his defence is a noble commentary upon the character of an honest, manly, independent farmer. Placing in full view of the people, his plough and other implements of agriculture—his plump, well-fed oxen and his daughter—not an *improved* woman—the *lady* that fashion manufactures—but a woman in shape and feature such as she was made by her God—neatly clad in garments which her own hands had wrought, he turned to the assembled tribes, and thus addressed them. "Behold! my Masters, the sorceries, the charms and the only enchantments which I use. My own daily toil, my early rising and late sitting up, the painful sweat which I endure, these I am not able to present to your view. I cannot bring them with me into this assembly." When the people had heard this, they unanimously pronounced him "Not Guilty."

We meet to-day, to celebrate the twenty-ninth Anniversary of our Society, the purpose of whose existence, is to encourage and promote the same sorcery, for the practice of which, that old Roman came near answering with his life. He who has practiced these enchantments with the most success, is the man whom to-day we most delight to honor. Proud as the County of Essex may be of her prosperous industry in the work-shop, the manufactory, or upon the ocean—which under the guidance of intelligence and sound morali-

ty, with the blessing of Heaven, can, out of New England, nowhere find its parallel, much more occasion for pride would she have were all her farmers in the same degree guilty as was Cresicus the Roman; for of all the employments in which men engage, none is more profitable to the community, more dignified or honorable in itself, or so well calculated to insure health and happiness to the individual, as that primitive and divine occupation—the culture of the earth. "Replenish the earth and subdue it," was the first command of the Almighty to man, and doubly grateful is the cultivated earth for the labor which man bestows upon her. She repays him ten-fold for his toil, and at the same time rewards him with strength, health and vigor. It has been said that "few politicians are half so useful members of a Commonwealth as an honest farmer, who by skillfully draining, fencing, manuring and planting, has increased the intrinsic value of a piece of land, and thereby done a perpetual service to his country."

But the *importance* of Agriculture, sometimes over-rated by prejudiced minds, is a self-evident truth. I cannot, however, avoid allusion to an illustration which has been painfully forced upon the mind of every man during the past year.

A little more than two hundred years ago, a small bitter root was discovered on the coast of Chili. From this worthless root, cultivation produced the Potato. *Improved* as it may have been, as late as the eighteenth century—a hundred years after its first introduction—English writers speak of it as comparatively valueless. Yet the partial failure of this crop in a small part of the world, has produced an amount of suffering, how uncertain in continuance—how incalculable in extent. While it has in some measure developed the vast agricultural resources of the United States, it shows better than any thing else, the importance of that branch of industry to the state, and may well cause reflecting men to consider whether this, of all the arts, does not the most deserve encouragement and support.

From the commencement of our Society, custom has made an address, in some way connected with the subject of Agriculture, a part of this day's exercises. Upon former occasions, we have had age to counsel, eloquence to persuade, learning to instruct, or the sound wisdom of practical experience to convince.

Qualified but poorly in any respect, the fact that the invitation to address you was given unanimously, was the strong reason which

made me presumptuous enough to accept it. It is gratifying to a man's pride, to suppose that his friends have a good opinion of him, whether he deserves it or not. Now to those who expect "to hear some new thing," I have only to say, save your ears for another occasion. If by a remark of mine, any man is induced to make two blades of grass grow where but one grew before, I shall have done some service and will be content.

On the annual return of this day here and elsewhere, the great *Improvements* in modern Agriculture have been frequently made an interesting topic of discourse. Thirty years have indeed wrought wonderful changes in farming as in everything else. It is also true, in nothing else has change been effected with so much difficulty. Ignorance and obstinacy have always sneered at improvement Nor have innovations in agriculture had these alone to contend with, but blind *error*, which "like the adder stoppeth her ears and will not listen to the voice of the charmer, charm he never so wisely," has always stood in their way. It has been said that "*error*, when she retraces her footsteps, has farther to go before she can arrive at truth than ignorance;" but the way which she takes to get out of the heads of some farmers, is the crookedest road, that it ever entered into the imagination of man to conceive. Why, if the best iron plough of this day, had been presented to a farmer thirty years ago, he would as soon have told the assessors that he was not taxed high enough, as to have used it. But though old superstition is in its grave and many an ancient prejudice lies buried beside it, the race is not quite extinct.

Should the genius of America, in time to come, beget a second Walter Scott—although we may not introduce the mother of Cuddie Headrigg,* as a representative of the character of New England yeomanry in this nineteenth century, still he will find many like a servant of the late Duke of Bedford, of whom it is said, that when ploughing with his four horses yoked at full length, the Duke left his carriage and zealous to do him a service, yoked the horses two abreast, held the plough himself, and explained to him the *advantage* of this new method. The answer of the man was characteristic of the profes-

*"Your leddy-ship and the steward hae been pleased to propose, that my son Cuddie suld work in the barn wi a new fangled machine for dighting the corn frae the chaff, thus impiously thwarting the will of Divine Providence, by raising the wind for your leddy-ship's ain particular use by human airt, instead of soliciting it by prayer, or waiting patiently for whatever dispensation of windProvidence is pleased to send upon the sheeling hill." *Old Mortality.*

sion—the ready answer which prejudice suggests to ignorance,—that such a plan might answer with his Grace, but was *too expensive* for him.

But the fact that great improvement has been made and *is making*, is of more importance to our present purpose. Men have found out, that, if he who plants an oak, looks forward to future ages and plants for posterity; that he who plants a fruit-tree does it for himself as well as for those who come after him; to graft an apple tree is better than to suffer it to grow wild; that manures are quite as efficacious when properly composted as when used fresh from the barn-yard; that sixty bushels of corn to the acre are more profitable than thirty; that to sow grass with grain in the spring and have four-fifths of it destroyed, is not so well as to sow it by itself in the autumn and get two or three tons of hay to the acre the next season; that repeated, shallow skimmings of the surface soil is not good ploughing; and that to pass a roller over fields sown with grain or grass is better than to leave them in Indian hills. Some of them have learned that gravelly knolls and sandy highlands are not the only soils which pay for cultivation; but that our rich peat bottoms, covered with underbrush, weeds and water-grass, which have been abandoned to the caprices of nature ever since the ark rested on Mount Ararat, do in reality possess intrinsic value.

These deep meadows, which send forth from their dark bosoms the chilling dampness of disease and death, adding to the coldness and poverty of the adjoining highlands, by their unhealthy evaporations, seem to be so placed by him who made the world to say to man in stronger language than words, that labor properly applied shall prove a blessing rather than a curse. There they lie, side by side, scattered all over the County, the bog exuberant with unwholesome vegetation, the highland with its stinted growth of scanty herbage, both soils worthless and unprofitable, but each of them rich in all the elements of fertility which the other requires. Let the farmer do what a benignant nature encourages him to do, and these poor soils of New England which under bleak influences are fostered into a sickly fertility, will be quickened into almost spontaneous luxuriance.

But to enumerate *all the improvements* which have been made in agriculture for the last half century would take too much time. *One*, not only an improvement in itself, but the basis of all other improvements must not be omitted, and that is the diffusion of agricultural

knowledge by the Newspaper Press. Slowly, silently, almost by stealth, without the knowledge of the man himself, this mighty engine undermines old prejudices, and has taught the farmer that however independent he may be, he is not so much so, as that the experience of others will not profit him. Most of us have become willing to *seek directions*, even if they are contained in a *book*. We are becoming more like liberal, free-born and aspiring men.

Yet after all, agricultural improvement is in its infancy, and to nurture its youth and rear it to manhood, has been left to us, and to those who are to come after us. To direct how this shall be done is a difficult task. I shall however, upon two or three of the most important questions connected with the subject, venture to give an opinion, always premising that if I am wrong, I will, when convinced of my error, despite the shame of acknowleging it, and with all my heart most readily embrace a different opinion.

All will agree, that the *basis* of improvement lies in a more *thorough tillage*. Now one great hindrance to this, is the strong and universal tendency among farmers to own and cultivate too much land. I am well aware that I tread on disputed ground, and that there are those among us whose opinions, we are ready, and *with good reason*, to esteem almost as oracles, who "have no sympathy with this small farm theory." But with due deference to their opinions may I not start with this fact, that the case so commonly occurs as to make it a general rule, that our very large farms are very poorly cultivated? To the point which I have in view, we mean the apologue of the vine-dresser, who had two daughters and a vineyard. When his oldest daughter married, he gave her a third part of his vineyard for a marriage portion, notwithstanding which, he had the same quantity of fruit as before. When his youngest daughter was married, he gave her half of what remained, still the produce of his vineyard was undiminished. The secret was simply this, that the more thorough tillage which he was enabled to give to the remaining third part, trippled his produce, while at the same time it reduced the cost of cultivation. Now he that cultivates the most land, or produces the greatest crop, is not the best farmer, but he that can do it with the least expense. In Massachusetts the high price of labor is an insuperable objection to large farms. As it is, men must not only not be idle, but must at all times, and under all circumstances work to the best advantange, or the proceeds of their labor will not pay

their wages. Upon large farms, numerous and long lines of fence are to be kept in repair, taxes are to be looked after, work cannot be so economically done, because much of it is at a distance, and a large number of laborers must of necessity be employed, who to use an old adage, if they are not very carefully looked after, will be likely to drink out of the broad end of the tunnel, and hold the little one to their employer. I must not be understood to say that no *man can profitably* manage a large farm here. All rules have their exceptions. But I do say, that there are very few Bonapartes in agriculture, and that the great body of us are fit only to serve in the ranks.

It is *doubtful indeed*, if these large farms are the most profitable *anywhere;* for in countries where the cost of labor is almost nominal, small farms are said to produce the largest income. Stretching along at the foot of the Alps, those ever memorable mountains, whose lofty summits, white with eternal snows, reach far above the clouds—the birth-place of the glacier and the avalanche—is that province of Italy, which has been often called the garden of Europe. Its inhabitants are farmers, and very few farms contain more than seventy-five acres, yet the best authority asserts that these small farms bring more to market than the large ones, and that there is no country in the world which can dispose of so large a portion of its productions as Piedmont. True the soil is rich, deep, if you please, alluvial. The climate is moist, and the situation of the land makes it susceptible of being easily submitted to irrigation. After all, the main-spring of this abundant fertility is thorough tillage, which consists only on small farms.

*We* have not the same natural advantages, but the deficiency can be partially supplied by liberal manuring. Without this, you may plough the soil and subsoil, eradicate every noxious weed, studiously watch the progress of infant vegetation, and not get half a crop. And not only must we manure *liberally*, but our manures must be adapted to the different soils and different crops.

*Here*, most certainly, there is a wide field for improvement. The Chinese are said to be familiar not only with the relative value and efficacy of manures, but to understand and apply without loss, that which is best fitted to stimulate and support each kind of plant. *With us*, agricultural chemistry has made rapid advances within a few years. Yet in practice, I question very much, whether the ancients were not better cultivators of the soil than we are. "What

are the elements of good tillage, says Cato, the oldest Roman Teacher of Agriculture? To plough. What is the second? To plough. The third is to manure. Study to have a large dung-hill, says he, keep your compost carefully, when you carry it out, scatter it and pulverise it." This was advice given one hundred and fifty years before the Christian era, yet many of us are apt to regard composting as a *new discovery*, and we probably should never have thought it worth trying, if some modern humbugging agent had not coaxed us to pay for a patent right to make it. Subsequent writers advise the cultivator "not to carry out more manure than the laborers can cover with the soil the same day, as exposure to the sun does it great injury, and they tell us that the farmers of that day collected their manure and stored it in covered pits, so as to check the escape of the drainage." How many farmers in the County, leave their manure exposed to sun, and air and rain, for half the year! Are there not some who will tell you that it is *improved* by the operation?

One powerful fertilizer, little thought of, and less cared for, must, I am satisfied, sooner or later come into general use, and that is *liquid manure*. *Now*, it is not considered worth the pains of saving, but *its value* is ascertained beyond question. Take for instance the house plant, which your wife, or your daughter rears with care. Water it with a solution of Guano, no matter whether brought from some distant island of the sea, or more cheaply obtained from the floor of your pigeon-house—and what is the effect? At once it stands more erect, its leaves enlarge and assume a deeper hue, and what may have been just now, but a sickly nondescript, seemingly out of season and out of place, puts on the beauty and vigor of natural and luxuriant growth. On a large scale, apply it to your grass-lands, and what will be the result? Do you say this is mere supposition, and that a grain of experience is worth all the speculation in the world? Mark that spot of ground which is blessed with the drainings of a barn-yard. It may be, in common parlance, the *coldest spot* in the field. There the grass, as if the recent snow had given it life, starts earliest in spring, there it is clothed with the deepest green, and there the scythe of the mower finds the thickest and heaviest grass. The aftermath nearly equals the first Crop, and the cattle if suffered to do so, feed latest upon it in the Autumn. This is no matter of specu-

lation—but it becomes an instructive fact. In Flanders,* and when we speak of Flemish farmers, we speak of men worthy of imitation, this species of manure is relied on more than any other, and in China, where every town has its sworn broker expressly for the purpose of examining night soil it forms a fourth part of all the manure used.

Yet notwithstanding its known value, a great majority of us suffer it to run to waste, and in the largest public establishment† in the County of Essex, until recently if not now, this great element of fertility, has been suffered to escape into the sea.

An eloquent English writer says, if the kitchen-garden husbandry of Flanders could be substituted in our plains and the terraced culture of Tuscany in our hills, for the present system of agriculture, the produce of the British Islands would at once be doubled and afford ample subsistence for twice the number of its present inhabitants. If old England be capable of so great improvement, where in the scale of progress does New England stand?

Another matter worth a moments attention is the *Feeding of Stock.* A Southern gentleman, when about to commence farming, was led to inquire of an experienced neighbor, what was the best mode of making corn. "*Keep your work-horses fat,*" was the reply. Experience proved to him who made the inquiry, that this hint comprehended every thing connected with good cultivation, although neither of them knew at the time, that Cato had said two thousand years ago, that the secret of farming consists in feeding well.

Large sums of money have been spent by individuals and societies, to improve our breeds of cattle. The best foreign varieties have been made available to the man of the most limited means. Far be it from me to say a word to discourage this laudable enterprise, which has already effected much good and is destined to do much more, but when the merits of foreign varieties have been blazoned abroad, and the inferiority of our native breed carefully exaggerated, I have sometimes thought that the sin of its owner was laid at the door of the brute beast. Feed our cattle as they should be fed, and except symmetry of form, and a notable pedigree, what advantage has this imported stock over them? Do they make better oxen? Universal opin-

*The recent manure of a single cow, is valued in Flanders at ten dollars per year.
† House of Correction, &c., at Ipswich.

ion has long ago settled this point against them. Are they better cows? It is generally conceded that the Durham short horns are not. Some indeed talk learnedly in their favor, but it is very much on the same principle that an imported dandy with neither "wit, nor words nor worth," makes a greater impression in some circles, than he, who possesses all that the other lacks, but was so unfortunate as to spring up in a country, where all men are said to be born equal. But no matter whether you have Durhams, Devons or Ayrshires, so long as they are not well fed and cared for, you will have no better cattle, than that ill-favored native stock, which in many places, like the lean kine of Pharaoh, seem to be forsaken of God, and abused by man. Particularly is it the case among those men who for distinction's sake, may be called salt-hay farmers,—and not inappropriately so termed—for if there is any vegetable product upon which they set their hearts more than another, it is the unreclaimed salt natural growth of unreclaimed salt marsh.

Those of us who come within this class, make no improvement, and can make none. Our farms except perhaps a few acres about our dwellings, diminish in value. We plant but little, for although the ocean is upon one side of us, and rich peat bogs on the other, both ready to furnish an inexhaustible supply, we have little manure. We deny our cattle the benefit of scanty litter, for there is nothing in the shape of fodder, that cattle fed on salt-hay will not greedily devour. Our meadows capable of being easily reclaimed, and made as fertile almost as the prairies of the West, remain as they were a hundred years ago. Every year the unchecked clumps of bushes and briars are making greater inroads upon our open pasture lands. Stone walls carefully built by our ancestors, which time has shattered, are hastily and slovenly bolstered up to answer the demands of the present day, while the worthless shrubs which hedge them in, are preserved as a sort of heir-loom for the benefit of posterity. The time best suited for reclaiming our fresh meadows, for collecting manures, and for the general improvement of our lands is neglected. Still we are not idle, but in doors and out, at this season labor is unprofitably increased. The dawn of day finds us three, five or ten miles from home, engaged in our favorite business. And why do we turn night into day? Not from choice but necessity. For be it known,

that a blade of Damascus will not cut this nutritive salt-grass, unless it is moistened by the rain or the dew. Here we toil, until the approaching frost compels us to gather in the scanty harvest. We are obliged to sell the *best* of our products, to meet our expenses. Our horses and working cattle eat up the better portion of what is left, while our half-starved cows and other stock get the poor remainder, always thankful, if perchance a lock of decent fodder comes within their reach. The consequence is, our new milch-cows with scarcely flesh enough to prevent the skin from adhering to the bone, are worth but little more in the Spring than they were in the Autumn. Our manure heaps are no larger than they were the previous year. We can neither cultivate more land nor to better advantage; the result of all our labor is, that by going the same round from year to year, we can barely get enough to keep soul and body together, and never find time to advance one step in the path of improvement. We are content to imitate the example of the elder Laird of Dumbiedikes, whose dying charge to his son you will all recollect,—"Jock, when ye hae naething else to do, ye may be aye sticking in a tree; it will be growing, Jock, when ye're sleeping. My father tauld me sae, forty years sin' but I ne'er fand time to mind him."

Were I to pursue the subject farther, I should weary your patience and encroach upon the business of the day. The object of our Society as I have said, is to promote agricultural improvement. Its philanthrophic founders have done much in the cause, but they are fast passing away. Within a few weeks, one of their number who for some time presided over its affairs, alike zealous in the promotion of agriculture, as distinguished in his profession, has gone to his final rest. When such men die, not only are families and friends bereaved, but community suffers a great loss. A shadow of gloom comes over us when we recollect that those eminent social qualities which render the relations of life agreeable, and which Dr. Joseph Kittredge possessed in so remarkable a degree, have gone from among us. Let those who come up to fill these vacant places, remember that the art of Agriculture must progress. In the United States, she is sooner or later destined to reach the highest point of improvement. Great beyond those of any people upon earth, are the privileges enjoyed by the American Farmer, for the exclusive, absolute,

uncontrolled proprietorship of the soil is his. He has no occasion for political distinction. The vices of cities he puts far away from him. The success of his crops with the blessing of God, depends solely on his well directed, honest industry.

"Who are the truly great?
Minions of pomp and state
Where the crowd bow?
Give us hard hands and free,
Culturers of field and tree,
Best friends of liberty.
God save the plough."

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The following corrections in the Address have been made by the author.—
Page 4th, line 3d, Cresinus for Cresicus. Page 5th, line 27th, Headrigg for Hardrigg. Page 6th, line 8th, insert *that* before to. Page 7th, line 14th, read *despise* instead of despite; line 25th, read *is* instead of we mean; 27th line, insert *was* before married. Page 8th, line, 25th, read *with* instead of on.

# ORIGINAL HYMN,

WRITTEN FOR THE

ANNIVERSARY OF THE ESSEX AGRICULTURAL SOCIETY,

BY ALONZO LEWIS, ESQ.

We thank thee, God of harvest-home ! for what thy love bestows,
For all the varied providence that from thy bounty flows ;
We thank thee for the vernal rains that fertilized the ground,
We praise the for the genial sun that all man's labor crowned.

We thank thee, God of harvest-home ! for all our wealth of grain,
For the tall wheat, whose waving mass like ocean filled the plain ;
We thank thee for the fruitful store of bright and yellow corn,
Whose golden heaps luxuriant our fertile fields adorn.

We thank thee, God of harvest-home ! for all thy fruit so fair ;
The apple with its yellow cheek, the ripe and mellow pear ;
The downy peach, the luscious plum, the purple-clustered vine ;
And the fair show of radiant flowers that in our gardens shine.

We thank thee, God of harvest home ! for more than we may tell ;
We thank thee for the fragrant hay that fills our barns so well ;
We praise thee for the precious gifts that make our harvest feast,
And the choice store of healthful roots, sweet food for man and beast.

We praise thee, God of harvest-home ! that while in other lands
Pale famine stalks, and sweeps away their fever-stricken bands,
Our homes are blest with health and love, with plenty and with joy,
While social and domestic peace yields bliss without alloy.

We bless thee, God of harvest-home ! for all that we partake ;
Then let our hearts with gratitude, their hymn of praise awake ;
And when, our day of labor past, death's harvest-hour shall come,
May all our souls, like ripened fruit be safely gathered home.

# REPORTS, &c.

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The Committee of the Essex Agricultural Society appointed to examine the specimens of the Stock of the Massachusetts Society for promoting Agriculture, REPORT:

By the kindness of Elias Phinney Esq., of Lexington, a gentleman equally distinguished for his skill and enterprise as a farmer, and his public spirit as a citizen, seven animals of the stock of the State Society were present at the show, and commanded the admiration of all who are judges of fine stock. The thanks of the Society are due to Mr. Phinney for this ready compliance with the request of some of the Trustees, to give our farmers an opportunity to see for themselves the excellence of this stock; and as it is understood to be the intention of the Trustees of the State Society, as soon as the animals are of suitable age, to distribute them among the several county Societies, it is hoped that more attention will be given to raising animals of an improved breed in our own county. Some of our farmers might be surprised to learn that the average yield of their cows does not exceed three or four quarts daily, taking the year through. With proper care and management, this yield, it is thought might be doubled. The breed for milch cows best adapted to the climate and feed of this state, is thought to be the Ayrshire. Besides being deep milkers, they are known to be hardy, mild tempered and docile; they are cheaply kept, and fatten readily when not in milk. In Great Britain they have given an average of ten or eleven quarts per day through the year.

Besides the Ayrshire, several animals of the North Devon stock were exhibited; this breed has been long celebrated as beautiful in the highest degree. For the dairy, they are not equal to the Ayr-

shire, but in the union of the qualities of milking, fattening and working, they are not surpassed by any other breed. They have a quickness of motion which few horses can exceed.

We sometimes hear of cows of native origin which are great milkers, but little pains have heretofore been taken to preserve the breed; by crossing with the imported stock and their descendants, much may be done in time, to improve the character of our neat stock; it is with this purpose the Trustees of the State Society have, with much expense of time and money, imported the choicest animals of the Ayrshire and North Devon breeds. It has sometimes been questioned whether stock can be profitably raised in this county; there can be no doubt that if stock is to be raised, the best breed and the best animals should be selected.

Respectfully submitted,
DANIEL P. KING,
JOHN W. PROCTOR,
WILLIAM SUTTON.

Lynn, September 29th, 1847.

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## ON PLOUGHING WITH DOUBLE TEAMS.

The Committee on Ploughing with Double Teams (consisting of Daniel Adams of Newbury, Josiah Newhall of Lynnfield, Jonathan King of Danvers, John Whittredge of Hamilton, and Rufus Wyman of Salem,) have attended to that duty and REPORT:

That twelve teams were entered,—all of which appeared upon the ground, and ploughed the lots assigned them, being one-sixth of an acre each. The lots were drawn, and the work performed as follows, viz:

| | | | | |
|---|---|---|---|---|
| No. 1. to John Washburn | of Lynn, | time | 30 | minutes. |
| " 2. to Phillip Marsh | of Danvers, | " | 31 | " |
| " 3. to Elias Clough | of Lynn, | " | 28 | " |
| " 4. to John Newhall | of Lynn, | " | 33 | " |
| " 5. to Wm. R. Putnam, | of Danvers, | " | 46 | " |
| " 6. to B. W. Crowningshield, | of Topsfield | " | 47 | " |
| " 7. to Joseph Goodridge, | of West Newbury, | " | 39 | " |
| " 8. to Francis Dodge, | of Danvers, | " | 36 | " |
| " 9. to Elijah Pope, | of Danvers, | " | 34 | " |

No 10. to Moses H. Poor, of West Newbury time 40 minutes.
" 11. to Ira Worcester, of Ipswich, " 29 "
" 12. to Richard S. Fay, of Lynn " 34 "

Eight of the ploughs were Ruggles, Nourse & Masons, Eagle No. 25; two Sward B. same manufacturers; one Prouty's improved centre draft No. 33; one Prouty's No. 26.

The work was extremely well done, taking into consideration the situation of the land, being quite low and flat, and the heavy rains made a part of the land very soft. In one or two lots some parts were under water. We think that on no former occasion have we seen the ploughing done so well as on the present, except in turning the last furrow in two or three lots, which was not quite as perfect as might have been.

The teams were required to plough seven inches deep. The average width of the furrows was a little less than twelve inches, and the average time of performance was about thirty-six minutes.

The Committee would have been happy, had it been in their power to have awarded more premiums, as the work was so well done, that others perhaps might have been as deserving of a premium, or nearly so, as those to whom they were awarded. The Committee would suggest, as the competition in the ploughing match, for several years has been so great, whether it would not be better to add to the number of premiums, making six or more, even if no higher sum is appropiated. But would it not be better to make an addition to the amount usually appropriated for this purpose?

Most of the lands were ploughed so nearly alike, that it was rather difficult to decide upon the premiums, but after a full and particular examination of every lot, the Committee unanimously recommend that the premiums be awarded as follows:

To lot No. 3. first premium, $10.—Elias Clough, sward plough, 13.
" " 4. second " 8.—J. Newhall, Prouty's imp'd 33.*
" " 6. third " 6.—B. W. Crowningshield, plough, Eagle, 25.
" " 7. fourth premium 4.—J. Goodridge, plough Eagle, 25.

By order of the Committee,
DANIEL ADAMS, Chairman.

Lynn, September 29th, 1847.

*We have been requested by Mr. Newhall to say that he is particularly pleased with the operations of this plough, and thinks it is one of the best he has ever seen. We are glad to hear so favorable an account of our friend Prouty's ploughs.

## ON MILCH COWS AND HEIFERS.

The Committee on Milch Cows and Heifers, report:—

That the number of Cows and Heifers was unusually large, and they were apparently of a very superior quality.

After much deliberation, the Committee agreed to award the premiums as follows:

To Abner Newhall, of Lynn, for his cow, 8 years old, the first premium of $10.

To A. Brackett Lord, of Beverly, for his cow, 8 years old, the second premium of $7.

To Samuel King, of Danvers, for his cow, 7 years old, the third premium of $5.

To John Stone, of Marblehead, for his stared cow, 9 years old, the fourth premium of Colman's European Agriculture.

There were other cows exhibited, which deserve particular notice, viz: A cow by Albert Johnson, of Lynn, a very excellent cow, though somewhat advanced in years, no statement.

A cow by John Alley, 3d, of Lynn. This cow was entered principally on account of the excellent quality and quantity of butter made from her.

Two large and fine cows by George Hood, of Lynn, neither in milk at this time. All these added much to the beauty of the exhibition of cows.

E. G. Berry, of Danvers, exhibited two very fine three years old Heifers; and one two years old, now forward with calf. Of which, a statement is given of the produce of those in milk, which was very large for cows of that age.

Jacob Newhall, of Saugus, exhibited his fine black heifer, three years old, with a calf by her side twenty-two days old. It would have given the Committee pleasure to have had Mr. Newhall's heifer brought in competition with others, could he have stated the produce of her milk the present season, but they had no means of judging of this, but from the appearance of the very fine calf by her side.

Only one milch heifer was entered for premium, which was by Robert Kimball, of Ipswich, but the Committee did not feel themselves justified in awarding a premium on this, as no statement was given as to the quantity and quality of the milk she produced.

Charles W. Lord, of Beverly, also presented for inspection a fine cow, 5 years old.

John Marsh, of Danvers, entered for premium, a very fine cow, 7 years old, of native breed, and raised by himself; had he been able to have given the Committee an account of the whole product of her milk through the season, without relying on estimates and averages, this cow might possibly have come in competition with the best that were exhibited.

For two year old heifers, they award the first premium of five dollars to Samuel C. Pitman, of Lynn; and the second premium of three dollars to Eben King, of Danvers.

For yearling heifers, the first premium of five dollars, to Samuel C. Pitman, of Lynn, and the second premium of three dollars, to Robert Kimball, of Ipswich.

Your Committtee, in awarding these premiums, have endeavoured, as far as was practicable, to carry out, what they considered the views of the Trustees, and of the Society, by aiming to reward the skill of the owners of cows and heifers, in training and keeping them, in the best and most economical manner, rather than to reward them for their good fortune in being able to find and purchase those already trained, and expensively fed by others. For this reason, where there were two animals equally balanced as to merit, the one purchased, and the other raised and trained by the claimant himself, they thought it their duty to give the preference to the latter.

It is important that the best breeds of cows should be sought, and no less important that they should be properly trained up and well fed. All may well know that one good cow is worth much more than two ordinary ones, and even cows of good breeds have often been ruined by improper management while young, they, like some of the human race, frequently contract vicious habits in early life; they sometimes learn to be unruly by being in bad company, or enclosed with bad fences; they often early learn to push with the horns, and become uneasy and troublesome to milk; they should be carefully and gently used; they will, thus used, better give down their milk; for this reason, the gentle female hand is often much more appropriate for this purpose than that of the opposite sex. Cows should be milked quick, and milked clean, or they will soon shrink in their milk, and the best, thus, reduced to ordinary cows. Our female friends will pardon us for saying, that it is considered one

of the most valuable accomplishments among the females of the farmer's family, to be well learned to milk the cows, as well as to be able to perform the more delicate employments of the parlor, and other domestic duties.

All which is Respectfully submitted,

For the Committee,

TEMPLE CUTLER.

Lynn, September 29th, 1847.

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ABNER NEWHALL'S SATEMENT.

*To the Committee on Milch Cows and Heifers:*

GENTLEMEN,—The cow which I offer for premium is eight years old, she had her last calf December 1st, 1846, which was killed December 7th, 1846,—her time for another calf was the 8th, of December next, but by some accident she lost it in August. She has given milk as follows:

From December 7th, 1846 to the present time, I have kept an account of her milk by weighing night and morning, below is the result:

| | | | | |
|---|---|---|---|---|
| From December | 7th | to 31st, | $888\frac{3}{8}$ | pounds |
| " January | 1st | to 31st, | $1323\frac{5}{8}$ | " |
| " February | 1st | to 28th, | $1107\frac{3}{4}$ | " |
| " March | 1st | to 31st, | $1096\frac{3}{4}$ | " |
| " April | 1st | to 30th, | $962\frac{1}{4}$ | " |
| " May | 1st | to 31st, | $941\frac{1}{2}$ | " |
| " June | 1st | to 30th, | $997\frac{1}{4}$ | " |
| " July | 1st | to 31st, | $925\frac{1}{4}$ | " |
| " August | 1st | to 31st, | $707\frac{1}{2}$ | " |
| " Sept. | 1st | to 27th, | 651 | " |
| | | | $9601\frac{1}{4}$ | " or |

$3840\frac{1}{2}$ quarts of Milk.

For keeping, during the winter, in addition to hay, I fed her with carrots to the amount of twenty-five bushels, and I also gave her four bags of shorts, during the Summer she has nothing but grass, and rather short feed.

ABNER NEWHALL.

Lynn, September 28th, 1847.

A. B. LORD'S STATEMENT.

*To the Committee on Milch Cows and Heifers:*

GENTLEMEN,—The Cow I offer for exhibition and premium, is eight years old. She calved the 22d of June and has given milk as follows:

| | | |
|---|---|---|
| From June 25th to July 25th, | 1205 | pounds. |
| " July 25th to Aug. 25th, | 1166 | " |
| " Aug. 25th to Sept. 25th. | 1126 | " |
| Total, | 3497 | lbs. |

We have made 96 lbs. butter in three months, besides the milk for the family of five persons, and supplying her calf two months. Also sold her morning's mess four times. We have made 31 lbs. butter from September 1st to the 25th. She has not been dry for eighteen months. Her keeping has been poor grass-feed and two quarts of shorts a day, since August 15th.

A. B. LORD.

Beverly, September 28th, 1847.

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SAMUEL KING'S STATEMENT.

*To the Committee on Milch Cows and Heifers:*

GENTLEMEN,—I exhibit for premium my red cow, 7 years old. She was reared by me from a native cow of superior qualities, which was driven to a Durham short horn. She gave last year, on ordinary fall keep, without any grain, from the time her calf was taken from her in September to the first of December, (after which no account was kept,) from thirteen to fourteen quarts of milk per day. Her milk is of superior quality but as I sell it at this season of the year its properties for butter have not been tested. She is perfectly gentle and orderly about fence, and will remain quiet without company. She has with her a calf two weeks old.

SAMUEL KING.

Danvers, September 29th, 1847.

### JOHN STONE'S STATEMENT.

*To the Committee on Milch Cows and Heifers:*

GENTLEMEN,—I offer for your examination my starred cow of native breed nine years old; she calved the 9th day of May, and the calf was sold on the 29th, of the same month.

From the 1st to the 20th of June inclusive, she gave 311 quarts of milk, being a fraction over fifteen quarts and a pint per day. One week in June her milk was kept separate, and we made from it, 13¼ lbs of good butter.

Her keeping until the 1st of August, was good pasture only. Through the month of August she was fed with green corn-fodder. From the first to the twentieth of September she had good pasture only.

She has never had meal; has always been kept well in the winter season on English hay, corn fodder, and some kind of roots.

She has always been perfectly healthy, and has been owned by me six years.

JOHN STONE.

Marblehead September 28th, 1847.

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### EBEN G. BERRY'S STATEMENT.

*To the Committee on Milch Cows and Heifers:*

GENTLEMEN,—I offer for your inspection two, three years old heifers, in milk; also one two years old heifer, that will be in milk, about the 5th, of November next.

One heifer has been in milk eleven months.

| | |
|---|---|
| The product of her milk in the month of June, | 752 lbs. |
| " " " " at the present time, per, day, | 17½ " |
| " " " " 28 lbs. yields 1 lb. of butter. | |

The other heifer, has been in milk seven months.

| | |
|---|---|
| The product of her milk in the month of June, | 862½ lbs. |
| " " " " at the present time, per day, | 20 " |
| " " " " 25⅜ lbs. yields 1 lb. of butter. | |

Their keeping through the season, has been good pasturing, with the addition of green-corn fodder, raised for that purpose, and fed to them at night.

EBEN G. BERRY.

North Danvers, September 29th, 1847.

### SAMUEL C. PITMAN'S STATEMENT.

*To the Committee on Milch Cows and Heifers.*

GENTLEMEN,—The Heifers that I exhibit at the show, are one full blood Hereford two years and six months old, and one seven-eighths Ayrshire seventeen months old.

The Ayrshire I raised myself from a Heifer purchased from Daniel Webster. The Hereford was purchased in western New York by Mr. Stetson, when six months old. They have neither had any extra care or feed.

I find the Ayrshire do much better in our pastures than even our natives, and so far as I have had experience, they are fine milkers. I have one full blood Ayshire cow seven years old, which gave milk sixteen months. Never more than sixteen quarts per day. But gave five quarts per day at the end of the sixteen months, and only two weeks previous to her calving.

This without extra feed, I call doing well.

SAMUEL. C. PITMAN.

Lynn, September 29th, 1847.

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### ON PLOUGHING WITH SINGLE TEAMS.

The committe on ploughing with single teams report as follows:

Eight teams were entered, and all appeared on the ploughing field, and performed the work assigned them in a manner giving much credit to all engaged in it. The teams were most of them uncommonly fine, and under most perfect discipline. The lots were marked out with the plough, each containing thirty two rods, but were of unequal lengths. The number of furrows ploughed in each lot could not therefore be taken into the account, in awarding the premiums. The land was flat, but little elevated above the level of the tide. The soil a black loam free from stones, and a fine ploughing field had it been dry as usual at this season, but the late rains had rendered it wet, and some lots much more so than others, not giving an equal chance to all to perform their work equally well with the same power and skill. The lots to be ploughed were assigned by lot, each containing thirty two rods and were ploughed as follows:

No. 1. Daniel Roberts, Lynn, G. W. Winslow, ploughman, time 40 minutes.

No. 2. Farnham Spofford, Andover, E. G. Hadley, ploughman, time 64 minutes.

No. 3. John G. Walcot, Lynn, himself, ploughman, time 53 minutes.

No. 4. Philip Marsh, Danvers, himself, ploughman, time 64 minutes.

No. 5. Wm. R. Putnam, Danvers, himself, ploughman, time 47 minutes.

No. 6. Joseph C. Putnam, Danvers, himself, ploughman, time, 48 minutes.

No. 7. Moses Pettingel, Topsfield, George Pettingel, ploughman, time could not be kept, his plough broke, finished with another plough.

No. 8. John Marland, Andover, Henry Drew, ploughman, time 53 minutes.

The work was all done very well, and had the lots been of equal goodness, the committee are willing to believe it possible, that some of the premiums might have been differently awarded. The committee gave close attention to the work while under operation, and after a careful examination of the land when finished, and endeavoring to take into the account all the attendant circumstances, they unanimously award the premiums as follows:

| | | | |
|---|---|---|---|
| To Daniel Roberts, | of Lynn, | 1st premium, | $8. |
| To William R. Putnam, | of Danvers, | 2d " | 6. |
| To John G. Walcott, | of Danvers, | 3d " | 4. |
| To John Marland, | of Andover, | 4th " | 2. |

Lots No. 6 and 7 were probably as well ploughed as some which had a premium, except the last furrow which was very imperfectly done, Number 2 was wet and somewhat uneven, probably not giving an equal chance. All the ploughs used were of the manufacture of Ruggles, Nourse & Mason's, Eagle No. 2 except No. 7, which had Eagle, No 25, and No. 8 had an old plough without a name.

All which is respectfully submitted,

For the Committee, by

DEAN ROBINSON.

Lynn, September 29th, 1847.

## ON PLOUGHING WITH HORSE TEAMS.

The Committee on Ploughing with Horse Teams (present—Thos. E. Payson, Soloman Low, Gideon R. Lucy, Paul D. Patch and Osgood Loring) would say, that they have never before seen the Ploughing with Horses so well done as at this ploughing match. Eight teams were entered for premium, and the work was well done by all. Upon a careful examination of the work they have awarded,

| | | | |
|---|---|---|---|
| To John Dow, | of Ipswich, | 1st premium, | $8. |
| To John Marland, | of Andover, | 2d premium, | 6. |
| To John Grout | of Danvers, | 3d premium, | 4. |
| To Josiah Crosby | of Andover, | 4th premium, | 2. |

For the Committee,

THOMAS E. PAYSON.

Lynn, September 29th, 1847.

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## ON SUB-SOIL PLOUGHING.

The appointment of a committee, by the Trustees, "on subsoil ploughing and its effects" clearly indicates on their part, a desire to acquire information on this interesting subject, rather than a confidence in their ability to communicate it.

Perhaps there is no branch of agricultural labor, about which so little is experimentally known among us. Our oldest *experts* have scarcely had *five* years experience;—and very few, more than *one* or *two* years.

We could readily select from English publications what is there said in relation to sub-soil ploughing, where it seems to be deemed almost indispensable to improved cultivation; but this is not the kind of information sought in our Reports. We want the actual results on our own soil. We want our practical farmers, so far to try the experiments themselves, as to determine whether or not it will be for their advantage to continue the use of this instrument.

This has not yet been done by the farmers of Essex. Their *sub-soil ploughs*, like their *go-to-meeting clothes*, are kept for special occasions. They are not yet naturalized. They have not yet secured

the entire confidence of their owners. There is a jealousy respecting them. There is an apprehension, that the material which is started by their *deep penetration*, is not altogether well adapted to the growth of plants.

We have solicited and urged experiments on this subject; but with meagre practical results. We scarcely know the individual in the County, who has subsoiled half a dozen acres in a year. We have many farmers who have hundreds of acres well adapted to this operation, but they are slow to apply it. And even those who have done something at it, have not so matured their labors, as to be ready and willing to speak of them.

It should be remembered, that in conducting an experiment of this kind, it is not essential that it should be a successful one. If it is but judiciously managed, it may be quite as useful, if it demonstrates what is to be avoided, as well as what is to be sought. This practice of subsoiling is so extensive in other places, and has so much of plausibility connected with its theory, that it certainly commends itself to the favorable reception of all who are not entirely wedded to old notions and old practices. For ourselves, we do not pretend to speak of its good effects, from our own observation. But we have heard of the benefits accruing from its use, in so many ways, from those whom we have always found worthy of confidence, in other things, that we are disposed to give credit to their testimony in this.

Among those who have proved their faith by their works, in this matter, there is no one more conspicuous than E. Phinney, Esq., of Lexington, whose views in relation to it were given in a note appended to an address published in 1844, in the Transactions of the Society for that year. We have renewedly inquired of him, his views at the present time, and think we cannot, in any other manner, so well instruct the farmers of our County, as by appending his letter to this Report.

The Committee had the pleasure of witnessing, on the day of the Exhibition at Lynn, a very successful experiment with the subsoil plough, by Mr. Ira Worcester, of Ipswich. The plough was new, made by Ruggles & Co., of medium size, with a single flange. The soil was a dark rich mould on top, with a gravelly subsoil, free of fixed stones. The sod was turned by the power of one pair of cattle, to the depth of *six inches*. The subsoil plough was drawn by three

horses, and completely stirred and loosened *nine inches* deeper; so that it could be penetrated with a cane, as readily as could a chest of meal. Every one who saw it, was astonished at the ease with which the plough was held, and the perfection of the work accomplished by it. This work left the same material on the surface of the ground, as was before the ploughing. For all those crops where the fibres of the plants have a tendency to descend more than six inches (and we scarcely know any that do not) such a preparation of the soil must unquestionably be serviceable. We can scarcely conceive of a case, where it will be considered prejudicial.

The Committee take pleasure in awarding the premium of *ten dollars* to Mr. Worcester, for his enterprise in exhibiting this experiment.

And they also express their thanks to Mr. Nourse, the intelligent maker of the plough, for his politeness in explaining its structure and operations. Messrs. Ruggles, Nourse & Co., by their improved implements, and their accommodating disposition, have made a decidedly favorablo impression on the minds of the Farmers of Essex County. For the Committee,

J. W. PROCTOR.

Lynn, Sept. 29, 1847.

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Lowell, Sept. 24, 1849.

Dear Sir:—The opinions which I expressed to you some years ago on the effect of subsoiling, I have had no reasons to change. Every experiment I have made has invariably strengthened my convictions of the great utility of the subsoil plough. It is now more than twenty years since the first introduction of this important implement in English husbandry, and I now recollect no instance of the expression of a doubt of the advantages to be derived from its use; so far from this, it is not uncommon at this time, in that country, for landlords to expend six or seven thousand dollars in suubsoiling a single farm; and tenants are not unwilling to pay an increased rent, equal to the interest on the outlay. In that country not only soils too dry, but those too wet are considered as benefitted by this process. When there is a deficiency of moisture, it gives the roots of the

plant the means of penetrating deeper in search of moisture, when there is a redundancy, it is believed to furnish a means of absorbing or drawing off the excess of moisture.

I readily grant that the effect produced by the use of the subsoil plough on soils of different textures, may vary. On a stiff clay, and particularly one that is very moist, the effect is less permanent. The tendency of the several parts in a soil of this character to reunite, is so strong, and the effect of subsoiling of so short duration, I will allow it may be of doubtful expediency.

But in our *hard* New England soils, with our *hot* New England summers, so subject to severe droughts, at a season when our crops, particularly what are called our root crops, require the greatest supply of moisture, there cannot be, it would seem to me, a doubt, among farmers of a reflecting mind, as to the great benefits to their crops of the use of the subsoil Plough. It furnishes in my opinion an almost sure and certain means of counteracting the injurious effects of our sometimes severe droughts. The reasons would seem too obvious to need recital. The deep trench opened by the subsoil plough forms a receptacle for the surplus water that falls upon the surface at one season of the year, when it is retained to supply the deficiency at another. The "under crust" which is formed in long cultivated fields, at the depth from the surface at which it has usually been ploughed, has in most soils become as impenetrable by roots of plants, as the highway which has been travelled over, for a like number of years. The increase of crops in consequence of subsoiling has never with me been less than twenty-five per cent. The supply of rains for the present season has been so abundant that the difference in the yield upon lands subsoiled and those not subsoiled, could not be supposed to be so great on grounds naturally dry, as in some of the past dry seasons ; and yet on a dry loomy soil, with a hard gravelly subsoil, one part of which was subsoiled and the other not, planted with the chenango potato, I have recently gathered four bushels from each of the subsoiled rows, while from the rows not subsoiled, planted side by side, and cultured and manured, in other respects, precisely similar to the subsoiled rows, I have taken but three bushels. There is a difference of twenty-five per cent in quantity, and such was the improved quality and appearance of those on the subsoiled part of the field, that they actually sold in the market for twenty-five per cent more than the others.

I could adduce numerous instances, in this and other countries, to show the unquestionable result of subsoiling, but I consider the question too well settled to admit of doubt. I should as soon think of producing evidence that the light of the sun was necessary to bring forward and mature the fruits of the earth.

With great respect, I am dear sir,

Your Obt. Servt.

E. PHINNEY.

To J. W. Proctor, Esq.,

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West Newbury, November 16th, 1847.

My dear sir:—You enquire for my experience in subsoil ploughing, which is but small, and the little I have is without those nice and accurate observations necessary to speak with entire confidence on the subject. Some of the land on Pipe Stave Hill, has a very hard subsoil, composed of clay, gravel and small stones. I purchased a plough of Ruggles, Nourse & Mason two years ago, and have used it on all my ploughed land since. My custom has been to follow the sward plough with the sub-soil, both of which stirs the earth twenty inches, leaving the land much lighter, and much easier worked and cultivated after the ploughing. The labor of ploughing I consider double. One fact is settled with me from my small experience, which is, that I have a full compensation for the extra labor of ploughing, in the saving of labor in after cultivation, if planted with corn or potatoes, the land being much lighter for sub-soiling, harrows better, and the planting and of course the hoeing is much easier. I appropriated this season an acre of land for a more careful experiment; sub-soiled one half, manured and otherwise cultivated alike, I was fully satisfied of the fact above stated. The crop of potatoes was a failure from disease, therefore I could not judge of the produce, whether increased by sub-soiling, or not. I shall continue to use my sub-soil plough on this hard pan, notwithstanding the opinion of some, that the earth soon becomes more compact from being stirred. I judge it will be lighter for one season at least, and of course give the roots a better chance to extend. On light land I have tried sub-soiling but do not see much

benefit in any way. I use my plough with great saving of labor in my garden, and in land designed for tap roots. I shall endeavor to make more careful observations in future cultivation and may soon have an oppportnnity to judge of its effects on the grass crop, as some of my land subsoiled is now sowed down to grass.

Yours, very truly,

DEAN ROBINSON.

To J. W. Proctor, Esq.

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## WORKING OXEN.

The Committee on Working Oxen have attended to the duty assigned them, and Report:

That twelve pair of working oxen were entered for premium, by the following persons:

| | | |
|---|---|---|
| Elijah Pope, | of Danvers, | one pair, 6 years old, |
| Samuel Brown, | " | " 4 " |
| Francis Dodge, | " | " 5 " |
| Wm. R. Putnam, | " | two pair, drawed but one. |
| Philip Marsh, | " | did not appear. |
| Richard S. Fay, | of Lynn, | " " |
| Daniel Roberts, | " | " " |
| E. Redington Mudge, | " | one pair, 7 years old. |
| Moses Pettingill, | of Topsfield, | did not appear. |
| B. W. Crowninshield, | " | one pair, 7 years old. |
| Ira Worcester, | of Ipswich, | " 7 " |
| John Marland, | of Andover, | " 5 " |

The power and movement of the cattle were tried with a load of 5000 lbs. in a wagon weighing 1800 lbs.—total 6800 lbs. As before stated, only eight pair of them were tried, and one pair was excluded from their not being entered according to a vote of the Society, not entitling their owner to competition for the premiums. After duly considering the action, size and strength of the other seven pair, with reference to their respective ages, the Committee award

| | | |
|---|---|---|
| To Elijah Pope, | of Danvers, | the first premium, $10 |
| To Ira Worcester, | of Ipswich, | the second " 7 |
| To Francis Dodge, | of Danvers, | the third " 5 |

The pair of fine cattle belonging to John Marland, of Andover, did their work remarkably well. The Committee regret that they could not give them a premium. The most of them did well—so well as to render it rather difficult to decide which did best.

Respectfully submitted,

JACOB BROWN, Chairman.

Lynn, September 29, 1847.

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## ON FAT CATTLE.

The Committee on Fat Cattle having received the entry and statement of Gideon R. Lucy, of Newbury, of one pair of fat oxen, and of Daniel P. King, of Danvers, of three fat oxen, and having examined said oxen, respectfully recommend that the first premium of fifteen dollars be awarded to Gideon R. Lucy, for his oxen as being the best pair, and that the second premium of eight dollars, be awarded to Daniel P. King, for his red 9 years old oxen; also that the third premium of five dollars be awarded to Mr. King for his ox seven years, all which is respectfully submitted.

ANDREW DODGE,
BENJ. WHEELER,
M. H. GREENLEAF,
JOSEPH AKERMAN.

Lynn, September 29, 1847.

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## ON ROOT CULTURE.

Notwithstanding the great variety of dishes displayed in our bill of fare, the Committee on sitting down to their entertainment, found themselves restricted to but *one*,—and this not of the most savory odor. They found *onions* of the very best quality,—hashed, boiled and stewed,—but still nothing but *onions*. They also found this article, now for the first time brought forward. But being invited guests, they felt it to be their duty civilly to partake, of what was set before them. One of the committee gently asked for a few *potatoes*, an article never before among the missing, but was told that

something worse than the *Asiatic Cholera* had come among them, and that there was absolute apprehension of their being lost forever. Inquiry was made, whether the Doctors had been consulted as to the nature of the malady prevailing; and it seemed they had from all directions, *without agreeing*. On examining their prescriptions, they appeared to be *confusion confounded*. The only thing they hit upon as having a saving influence was *salt*,—and this, no two agreed as to the manner of administering. As to the *rationals* of the disease, no one was prepared to speak with confidence. The Committee were therefore, for a time at least, compelled to go without their favorite, the potato.

They asked for beets, the *blood beet*, the *sugar beet*, and the *mangel wurtzel*,—and they heard of their being still in existence, but few and far between. Why it is, that this luxuriant and nutritious vegetable, that a few years since threatened to supersede all others, is shoved aside, they are not advised; but certain it is, that the cultivation of the beet is not increasing. We have heard of its being suspected of engrossing all the nutriment within its reach, and of exhausting and unfitting the soil for subsequent crops; but whether these are jealous aspersions or well founded characteristics, we are not at present called upon to determine. More than once in our inquiries about the growing of the onion, have we heard it averred that beets and onions have no good fellowship with each other.

Not finding any beets presented, they next looked about for the *turnip*,—the far famed *Ruta Baga*, about which so much has been said, and from which, so much has been expected. A few small patches only could they hear of, and no one ready to speak their praise. Their suspicion is, that even the *Ruta Baga* is viewed with less favor than it heretofore has been. If this be so, they would gladly have been informed of it. For information of crops that do not succeed, may be equally serviceable as of those that do. Though we must admit, that we have never known a premium awarded, for the failure of a crop. But your committee are sensible of the impropriety of passing judgment against those, who have had no opportunity of being heard in their defence and therefore, they forbear to express any opinion against the *turnip*; they only regret that they could not have been favored with the taste of them.

When the committee sat down to their repast, they were not a little annoyed with the apprehension, that it might be anything but

agreeable, inasmuch as nothing but *onions* were then presented. But they were happy in being relieved of these apprehensions, before *it was too late*, by there being brought in several dishes of *Carrots* well prepared, which on examination were found to be of the very best quality. The beauty of the carrot, both when growing in the field, and harvested in the cellar, have made it at all times, a favorite vegetable in our estimation. This opinion of its excellence has in no measure been weakened by the examination of the statements of the successful cultivation by Mr. B. P. Ware of Marblehead, and Mr. H. Bushby of Danvers. Both of these gentlemen, too diffident to come forward with their claims, until they were certain they had something worthy of presentation, have at the request of the committee, handed in their accounts of culture, which are herewith submitted. Their crops are remarkably good. Mr. Ware's crop, on nearly one acre, is at the rate of *thirty-five and a quarter* tons to the acre. Mr. Bushby's crop on more tha half an acre, is at the rate of *thirty-two and one-third tons* to the acre. There may have been larger crops than these; but the largest that has heretofore come to our knowledge in this County, was *thirty-two tons* to the acre—and this on extraordi- good land. Mr. Ware's land, situated on the borders of the ocean at Marblehead, we know to be good: and so are his advantages for dressing it,—of which he made a liberal use—applying at the rate of *eight cords* of manure to the acre. Mr. Bushby's land situated in in the South-westerly part of Danvers, on Needham's plain (so called) is of ordinary quality; but for ten years past, has been under the the care of most faithful cultivators. He applied manure at the rate of *five cords* to the acre. Upon a careful examination of both their statements, and taking into view all the attendant circumstances, the committee *regretted* exceedingly that they could not have had an opportunity of viewing the crops while growing. The committee are aware that the *largest quantity* of produce on the same quantity of land, all other things being equal, is of course the most meritous claim. They are also at the same time aware that premiums should be awarded, not so much for the *quantity of produce*, as for the skill apparent in the production of it. In view of all these facts, the committee entertain a highly favorable opinion of both these claims, but are not prepared to say which is the most worthy: and therefore think it proper to divide the premium.

At the solicitation of the Committee, they have been kindly fa-

vored by Mr. Daniel Osborn, Mr. John Peaslee, Mr. James P. King, and Mr. Aaron C. Proctor, all of Danvers, with minute statements of their methods of cultivating onions, and of their products the present year. These statements are herewith submitted.

In addition to the information thus derived, and in compliance with the wish expressed at the time of their appointment, your committee have spared no pains, by personal examination of fields under culture, through the season, and by inquiry of those best informed on the subject, to become thoroughly acquainted with this branch of culture. And although they do not wish or expect every owner of land to become cultivators of onions; nor do they believe that all have the skill, industry and perseverance necessary to success, if they should attempt it; still they are not aware of any other use of land that affords a better reward for the labor applied, unless it may be the cultivation of some fruits and garden vegetables, in the immediate vicinity of large markets, such as *strawberries*, *asparagus*, *cellery*, &c. &c., for which the demand is limited; and which must necessarily be distributed and consumed at the time.

Finding it impossible to condense within the reasonable limits of a Report, our ideas on this subject, we have arranged them in the form of "An Essay on the Cultivation of the Onion," and submitted it to the examination of the Committee appointed to judge of such papers.

The general result of our inquiries is, that the average yield of Onions in the town of Danvers the present year (where at least two hundred acres have been cultivated) is One hundred and Eighty barrels, or from four to five hundred bushels per acre. The average value, for several successive years, has been *one dollar* per barrel. The present year, the best kinds have commanded in the market, one *dollar and a quarter* per barrel. The average cost of dressing and cultivating an acre of land with onions does not exceed *seventy-five dollars*—leaving a *net income* for the use of the land, of at least *one hundred dollars* per acre.

The Committee recommend that the Society's premium of *six dollars* be awarded to Mr. John Peaslee, for his successful culture of onions. And that a gratuity of *three dollars* each be given to Mr. Daniel Osborn, Mr. Aaron C. Proctor, Mr. James P. King, Mr. Benjamin P. Ware, and Mr. Henry Bushby, for their attention in preparing their statements; and in the hope, that such *persevering laborers* and *accurate observers* will be disposed to become members of

the Society. For it will be remembered that a large part of the generation who founded the Society have past away; and the remainder are admonished that they will soon cease to be useful.

For the Committee,

J. W. PROCTOR.

Danvers, November 15th, 1847.

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AARON C. PROCTOR'S STATEMENT.

*To the Committee on Root Culture:*

GENTLEMEN,—At the request of my brother, I present a statement of my cultivation of onions for five years past. I do this, not pretending to any superior knowledge, for I am a novice in the business; nor to any extraordinary crops; but to show by what steps I have advanced; and enable others to guard against my errors.

In 1843, I appropriated half an acre of flat land to this use. The soil a sandy loam of fair quality. The land had been planted with carrots and beets the preceding year. I put upon it two and a half cords of stable manure, and a leach of ashes. Ploughed in the manure—ploughing about five inches deep. Wed twice thoroughly, and once after haying. Raised two hundred and fifty bushels. On the carrot ground, there was one-quarter part more onions, than on the beet ground; and they came forward earlier and fairer.

In 1844, I cultivated the same piece of ground, and applied about the same manure. Wed twice, and used the onion hoe in clearing the weeds; found this to relieve the severity of the labor. Sold from the lot three hundred bushels at half a dollar a bushel. One quarter part of the lot was planted with seed that I purchased, that came up badly, and yielded but little. At the second time weeding, I sowed grass-seed on the land, which took well, and has continued since to yield at least two tons to the acre.

In 1845, I took a piece of elevated ground, three-quarters of an acre, rocky, hard land, strong, black soil, rather moist, and not forward; had been planted two years with corn, ordinary manuring, and yielded about forty bushels to the acre. I split the hills and ploughed, as early as the ground would admit of its being done; spread on

seven cords of manure, and ploughed it in, then harrowed the land thoroughly, spread on two leaches of ashes—these not fully covering the land, I applied about thirty bushels of dry ashes; then passed over the land with a cultivator, harrowed it, bushed it, and raked it, spared no pains to place it in a good condition. Sowed about three pounds of seed to the acre. Wed as heretofore. About one-eighth part of the lot was cut of by the *grubb-worm*—a very vexatious visitor, and one that demands *close squeezing*. I gathered and sold two two hundred and seventy bushels, at an average price of forty-five cents. In the Autumn, I was particular to clear the land of all refuse material, believing this to be the most effectual way of avoiding the troublesome visitor, of which I have spoken.

In 1846, about the first of May, I spread upon the land five cords of stable manure, ploughed it in, harrowed, bushed and raked it. Then sowed about four pounds of seed to the acre,—intending some spare plants for the use of the worms. Let out the care of the field and harvesting—allowing therefor, one-third of the crop. My proportion was one hundred barrels fair onions, which sold for one dollar a barrel; and thirty-three bushels of small ones.

In 1847, I put upon the land four cords of muscle bed, costing two and a half dollars a cord, and three cords of manure, worth four dollars a cord; ploughed in the dressing about the first of May. Sowed seed at the rate of three pounds to the acre, which I purchased of Mr. D. Buxton—the round, plump onion. Wed the first time about the sixteenth of June, and finished weeding the second time, the fourth of July. After this, was busily engaged in haying; and when I looked at my onions, found the field completely covered with parsley; so that I was fearful the crop was spoiled. We immediately applied ourselves to pulling out the weeds, and taking them away by cartloads. All parts of the field were essentially injured, by this process and a severe wind that soon followed: where the weeds were first cleared, the crop was best. I selected, gathered and measured ten rows together, which yielded four and one-half bushels to the square rod—or at the rate of 720 bushels to the acre. Had it not been for the *weeds* and the *wind*, I know no reason why the entire lot would not have yielded in the same proportion. We have gathered and sold four hundred bushels, and have a few remaining. I have had eleven acres of other vegetables to take care of—fifty acres of grass to mow, and the milk of twelve cows to distribute.

These facts I mention, as explaining the reason, why my onions did not receive all proper care. Those who make it their special business to attend to this crop can well have them in greater perfection.

I have spoken of using *old well rotted manure.* I presume *green manure* from cattle, if it can be well mingled with the soil, will do quite as well, or better, as it has more strength. Where the onion land is sloping or liable to wash, care should be taken to guard against this by ploughing furrows about one rod apart.

I estimate the net income of my *best half acre* of onions, the present year, to be not less than *seventy-five dollars*; and for the whole period I have raised them to be not less than *fifty dollars a year.*

Respectfully submitted,

AARON C. PROCTOR.

Danvers, October 30th, 1847.

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JOHN PEASLEE'S STATEMENT.

Sir,—At your request, I communicate the following facts relating to my culture of Onions. I have about three acres of land cultivated with onions. Lot No. 1. on Wilson's Hill, west of Liberty St. containing one acre and three quarters. Lot No. 2. on the opposite side of the St. containing three quarters of an acre. Lot No. 3. situate in the field next adjoining easterly, containing half an acre.

Lot No. 1. has been cultivated with onions for fifteen years or more. When I first began upon it, it was rough and full of large stones. It had been manured but little for many years. For five or six years I applied to it about five cords of muscle bed to the acre, costing about two dollars per cord. Since then I have applied about five cords of manure, principally from the stables, to the acre, costing from four dollars to five dollars a cord. In the spring I plough the land once, then harrow it and bush it, and rake it so as to make the surface finely pulverized, and free of all impediments to the sowing of the seed. I use a machine for distributing the seed. A man will sow two acres in a day, after the land is properly prepared. I use about three pounds of seed to the acre. I raise my own seed. It is estimated worth one dollar a pound. I am careful

in selecting the best formed onions for seed. Great improvement has been made in the quality within a few years, by care in the selection of onions for seed. I usually weed them twice with care. I now use a machine for the hoeing which moves on wheels, and diminishes the labor very much. A man with a machine will readily hoe an acre in a day. The next process is the pulling and throwing them into beds. When this is done, if the weather is fair they will need to be turned once with a rake; and then in about two weeks after they are pulled, they will be in a condition to be gathered. They are sorted by children. I have frequently known boys and girls of ten years of age, sort fifty bushels in a day. The usual allowance for this is one cent a basket. Lot No. 2. has been cultivated with the onion for about ten years. It is land of very good quality. The crops on this was extraordinary good. Lot No. 3. was never before cultivated with the onion. It is a hard, rocky strong soil. The average quantity of manure on all the land was about five cords to the acre. The land on which these crops were raised, in its present condition, is worth about two hundred dollars per acre. Care has been taken in years past to prevent the weeds seeding upon the land; and hence the labor of cultivation, has been much lessened. Myself, and a boy about fifteen years old, have done all the labor, excepting about twelve dollars worth hired by the day. I have other lands and crops to attend to; so that not so much as half our time has been applied to the onions. Our crop the present season amounts to *nineteen hundred and eighty bushels* of onions, as fair as I have ever seen—with few small ones or skillions to be thrown out. They now sell readily at half a dollar a bushel, cash payment. Last winter they advanced to nearly double the autumnal price.

I have given a statement of all my fields of onions, without any selection of pieces,—the same having been cultivated without any extra care, or intention of publication. We in Danvers think we have made great improvements in the cultivation of this crop within a few years, and have been willing to continue them among ourselves. But still, I do not hesitate to state the facts just as they are, and if any one is willing to follow this mode of cultivation, and work as hard as I have done, I cannot doubt he will find a fair reward for his labor.

JOHN PEASLEE.

Danvers, September 25th, 1847.

JAMES P. KING'S STATEMENT.

Sir,—My cultivation of onions the present year has been, on a lot of land, situate adjoining the Emerson farm containing one acre and one third. In 1842 it was broke up and planted with corn. About four cord of compost manure was then applied. It yielded about fifty bushels to the acre. In 1843, I ploughed about nine inches deep, and put on eighteen cartloads of stable manure, and planted carrots, and raised twenty-one tons, which I sold on an average for eight dollars a ton. In 1844, I ploughed about six inches deep, and applied about five cords of manure, mostly from stable. I then obtained about four hundred bushels of onions to the acre.

In 1845, I ploughed shallow, and put on about one hundred bushels of leached ashes, and four cords of stable manure, and obtained about four hundred and twenty-five bushels to the acre.

In 1846, I put on two leaches of ashes, one hundred and eighty bushels, and three cords of manure; all costing twenty-five dollars; and obtained five hundred and sixty bushels of onions.

In 1847, I ploughed the land but once, applied two cords of muscle bed, two leaches of ashes, and one and a half cords of manure; and obtained six hundred and fifty bushels. Until this year, I have sown the flat onions; this year I sowed part flat and part round. The flat yielded at the rate of four hundred and twenty bushels to the acre. The round yielded at the rate of five hundred and thirty-three bushels to the acre. No difference in the land or treatment. I have used the machine for distributing the seed, and the onion hoe, for clearing the weeds. They were wed twice thoroughly, and hoed and wed the third time. I have been careful to clean all the weeds and refuse material from the land in the autumn. My crop was severely injured by the wind in the early part of August. Until this wind came, they looked very large and promising. We thought the injury amounted to one hundred bushels to the acre. The ground is level, and a strong hard soil, rather rocky. My crop has sometimes been affected with what we call the *grub-worm*. It is a dark colored worm, about one and a half inches long, that eats off the plant close to the ground. I have sometimes known them destroy the rows, several feet in extent. They operate in the night time, and the only way to prevent it, is to hunt for them, and destroy them. I have known fields entirely destroyed by this worm.

My mode of management has been much the same as that of oth-

er cultivators. As a dressing for onions, I give the preference to *well rotted stable manure.*

JAMES P. KING.

Danvers, October 20th, 1847.

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DANIEL OSBORN'S STATEMENT.

*To the Committee on Root Culture.*

GENTLEMEN,—I offer for a premium a crop of onions, raised from one acre and thirty-two rods of land, measuring eight hundred and seventy bushels. Land worth two hundred dollars per acre; dark soil, western descent. A crop of onions has been taken from the land, a number of years in succession, none of them, however, so large as the one the present year. The manure which has been used is well rotted stable manure, worth four dollars and twenty-five cents per cord at the stable. The land has been ploughed to a depth just sufficient to bury the dressing. Between the first and middle of April of the present year, the land was manured, ploughed, and prepared as usual, and a few ounces less than three pounds of seed sown to the acre. The usual method of hoeing with a machine and weeding by hand was pursued. The crop was harvested by the twentieth of September, and carefully measured in a bushel basket.

The statement of the expenditures is as follows:

| | |
|---|---|
| Six cords of manure at $4,25 per cord, | $25 50 |
| Spreading manure, preparing and sowing, | 6 00 |
| Two and seven-eighths lbs of seed at $1 00 per lb, | 2 87 |
| Hoeing, | 6 00 |
| Weeding, | 12 00 |
| Harvesting, | 8 00 |
| Making an aggregate amount of, | $60 37 |

All of which is respectfully submitted.

DANIEL OSBORN.

Danvers, October 29th, 1847.

BENJAMIN P. WARE'S STATEMENT.

*To the Committee on Root Culture*:

GENTLEMEN,—I offer for your consideration a crop of carrots raised upon land of a gravelly loam, on which was raised a crop of potatoes for two years previous, from a dressing of compost made of barn and sea manure, at the rate of six cords per acre each year.

In preparing the land for carrots last Spring, I first spread on a compost made from meadow mud, dug in the August previous and kelp (taken from the sea-shore during the Winter) in equal proportions, the whole being thoroughly mixed and pulverized before spreading, at the rate of eight cords per acre, which was well ploughed in, and allowed to remain ten days, then the land was cultivated, with a large ox cultivator, made upon a larger scale than those commonly used with a horse, after which it was harrowed, and then dragged with a common stone drag drawn sideways, which in some instances, I think answers a better purpose than a roller; the seed was sown in drills fourteen inches apart, at the rate of three quarters of a pound per acre.

The carrots were hoed and wed twice during the season thoroughly, and the third time slightly, as no weeds had gone to seed for two years previous, the process of weeding was much more easily accomplished, the crop was harvested by topping the carrots with a sharp shovel as they stood in the ground, and then ploughed out, which is a very expeditious method.

The weight of the crop was ascertained by digging, and throwing the carrots in heaps, of six several rows, in different parts of the piece without selection, and when dried, were weighed, the rows in the whole piece were counted and multiplied by the mean weight of one row resulting as follows; upon $147\frac{21}{160}$ rods of land there were grown, 32 tons, 965 lbs of carrots.

Respectfully,

BENJAMIN P. WARE.

Marblehead, November 12th, 1847.

This certifies that I saw the above specified land measured, and the carrots weighed, and can testify to the correctness of the statement.

THOMAS P. BARTLETT.

### HENRY BUSHBY'S STATEMENT.

*To the Committee on Root Culture.*

GENTLEMEN,—The field that I have cultivated with Carrots the present year contains ninety-five rods.

It has been under cultivation for vegetables for a dozen years past. It is a sandy loam, naturally rather a shallow soil. It has been manured with four to five cords to the acre. The last year I raised on it sugar beets and sage. I planted carrots this year to bring it into a condition for the raising of onions. I put about three cords of green manure from our barn yard to the acre. Ploughed it in about six inches, bush harrowed it, avoiding the use of the iron harrow, so as not to bring the manure to the surface. Sowed the seed about the 10th of May, by a drill machine, in rows, fourteen inches apart, the lot was sixteen rods long, and contained 78 rows. I sowed half a pound of seed of the short horn carrot. Wed them twice. Pulled the carrots, without any use of shovel or spade. I had six hundred and forty bushels, weighing sixty pounds to a bushel, making nineteen and one-fifth tons, valued at $7 per ton, making the gross produce $138.

HENRY BUSHBY.

Danvers, November 13th, 1847.

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## ON AGRICULTURAL IMPLEMENTS.

The Committee on Improved Agricultural Implements REPORT:

That Messrs. Ruggles, Nourse and Mason, of Boston, exhibited several highly finished and improved ploughs of their own manufacture. Their ploughs have so often taken the premiums of our own and other Agricultural Societies, and their merits are so generally known, that it would be superfluous now to praise them. They also exhibited a winnowing machine, hay cutter, vegetable cutter, seed sower, garden cultivator, and improved ox yokes, well deserving notice. Among their other tools were very handsome specimens of forks and hoes made by Partridge of Medfield, whose tools are known to be the most substantial and durable articles of the kind in the market.

The Committee award to Ruggles, Nourse, and Mason, a premium of $10 00

To George L. Newcomb, of Salem, for Colburn's Metalic Pump, manufactured by him, an excellent article, a gratuity of 3 00

To E. Goss, of Salem, for a refrigerator on an improved plan, a gratuity of 3 00

To J. & H. Hale, of Salem, for Crowell's Thermometer Churn, a gatuity of 1 00

To Theophelus N. Breed, of Lynn, for several specimens of improved grindstones, a gratuity of 1 00

Respectfully submitted,

For the Committee,

DANIEL P. KING.

Lynn, September, 29th, 1847.

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## ON HORSES AND COLTS.

The Committee on Colts have examined those offered for premium and REPORT:

That Horace Ware Jr., of Salem, is entitled to the first premium of ten dollars, on his bay colt, four years old.

Josiah Crosby of Andover, is entitled to the second premium of eight dollars, on his dark bay colt, three years old.

Nathan Dodge of Hamilton, is entitled to the third premium of four dollars, on his bay colt, of fifteen months old.

John Jacobs of Danvers, is entitled to the fourth premium of four dollars, on his bay colt, of seventeen months old.

Also, a gratuity of six dollars to Enoch Northend of Newbury, for his two year old colt.

For the Committee,

ANDREWS BREED, Jr.

Lynn, September 29th, 1847.

## ON BULLS.

The Committee on Bulls REPORT:

That they have examined the five bulls entered for premium, and do not think any of the animals worthy of the first premium.

They recommend that the second premium of six dollars be awarded to Allen W. Dodge, of Hamilton, for his white Durham bull, seventeen months old. They do not like the color of this animal, but as they consider him the best formed bull, they award the premium as above.

The third premium of four dollars and a gratuity of Coleman's European Agriculture, to Horace Ware, Jr., of Salem, for his native bull, four years old.

A gratuity of two dollars to Howard Roberts, of Lynn, for his bull, three and a half years old.

Your committee were much pleased with the Ayrshire and Devon bulls, presented for exhibition only, by the Massachusetts Agricultural Society. I would recommend them to the attention of the farmers of Essex County.

For the Committee,

J. H. COGGESHALL.

Lynn, September 29th, 1847.

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## ON SHEEP.

The Committee on Sheep, REPORT:

That there was only one lot entered for Exhibition or premium, Six yews and one buck, reported to be native breed, and a sample of a flock of fifty-four.

They were from the farm of Mr. James Marsh of Danvers.
The entry is accompanied with a statement from him of his manner of treatment, which we recommend should be published.

The sheep appeared in ordinary condition and of common size. And it may be profitable stock for a part of his farm.

And this being the only lot entered, the Committee would recommend a gratuity of five dollars to him, for his interest manifested in bringing them to the show.

MOSES NEWELL.

Lynn, September 29th, 1847.

JAMES MARSH'S STATEMENT.

*To the Committee on Sheep.*

GENTLEMEN,—I present for premium 1 Buck and six native sheep being a sample of my flock of fifty. In presenting which I offer a few remarks. My attention to keeping sheep was first called up by the state of my pastures, they being bushy and too rocky to plough without too much expense, my cattle would not keep them down without being kept too short. I found mowing did but little towards subduing them. About seven years since I was induced to try sheep by way of experiment in subduing bushes without much regard to the profits of the sheep. I accordingly procured six, the next year I increased my flock to fourteen, these I kept on a pasture that would have about half kept a cow, the sheep did well, the pasture did much better. I have since increased my flock to fifty and intend still to increase it further. My method is to cut the bushes close and keep as many sheep as will keep them down, and each year give them as many more as they will subdue in this way. I have nearly destroyed all the barberry, blueberry, blackberry, and raspberry bushes (and they were very plenty) in my pastures. The above named bushes are favorite food for sheep they will not suffer a green leaf to remain in their reach. My pasture where they have run produces more than double the feed it did before.

The two past years I have been trying an experiment on about twenty-five acres of land principally covered with wood-wax and barberry bushes (entirely worthless for neat stock) which has exceeded my most sanguine expectations. While the sheep have done well, the wood-wax has decreased nearly one half, I think in a few years it will entirely run out.

I am fully convinced that most of the old mossy, bushy pasture of Essex County might be much improved by keeping sheep. My method would be not to keep them with neat stock, but keep as many sheep as the lot would pasture and change yearly or as often as they performed their task of subduing bushes, the result would be a large increase of feed the years following the sheep.

My manner of treatment is to see them often, give them salt about once a week, keep them well sheltered from storms, and by a little feed and kind words to keep them as gentle as possible so that I can call my whole flock as far as they can hear my voice. They will do well out as long as the ground is bare. I then yard them until

spring, never allowing them to ramble over fields. I feed on meadow and salt hay, and wood-wax until about yeaning, when they have good hay, and some grain, giving them a liberal supply of roots through the winter. My sheep thus far have much more than paid for their summer keeping in the improvement of my pastures.

The principal profit aside from the benefit to the pasture is the lambs which for the three years past have been as follows, viz:

| | | |
|---|---|---|
| 1845 | 3 00 | per head. |
| 1846 | 2 90 | do |
| 1847 | 2 80 | do |

The deduction the two last years being on account of some late ones caused by changing some of my flock. The wool averages about 1,00 per head.

Yours Respectfully,

JAMES MARSH.

Danvers, September 26th, 1847.

P. S. I have found the native sheep of a medium size the most hardy and will bear short pastures much the best.

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## ON SWINE.

The Committee on Swine have attended to their duty and REPORT:

That four lots of swine were entered for premium, and after deliberate examination, they award the premiums as follows:

To Samuel C. Pitman, Lynn for his boar, Leicester breed, first premium. $5 00

To Samuel C. Pitman, Lynn, breeding sow, same breed, first premium. 5 00

To John Alley 3d, Lynn, " " " " second premium. 3 00

To John Alley 3d, Lynn, litter of weaned pigs, first premium, 6 00

To Joseph M. Fuller, Lynn, " " " second " 4 00

To Israel Brown, Beverly, best weaned pig, 2 00

Hiram L. Newhall of Lynnfield, offered two very fine pigs, which were too old to come within the rules of the Society.

For the Committee,

R. A. MERRIAM,

Lynn, September 59th, 1847.

## ON FRUIT TREES.

The Committee on Nurseries of Fruit Trees, respectfully REPORT:

That the number of nurseries entered for premium was four, viz; Wm. G. Lake, Topsfield, James B. Cole, Beverly, Samuel C. Pitman, Lynn, and Charles F. Putnam, Salem. Annexed are the statements of each of these gentlemen.

In view of all the circumstances your committee award,

To Wm. G. Lake, of Topsfield, the 1st premium of $10
To Charles F. Putnam, of Salem, the 2d " 8
To Samuel C. Pitman, of Lynn, the 3d " Washington's Letters on Agriculture.

Your committee also recommend a gratuity of four dollars to James B. Cole, of Beverly.

Your Committee have also viewed two peach orchards, and have concluded for various reasons not to award premiums for them.

For the Committee,

RICHARD P. WATERS.

North Beverly, November 10th, 1847.

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### WILLIAM G. LAKE'S STATEMENT.

*To the Committee on Fruit Tree:*

GENTLEMEN,—The trees which I offer for your consideration, consist of about fifteen hundred apple trees, from one to three years upon the bud, standing upon about one and a half acres of my nursery ground. The land was prepared in the following manner, viz; a part of it was ploughed, and planted with potatoes, and manured in the usual manner, the other part of the land was manured and sowed with the seed. I transplanted them out into nursery lands at one and two years old from the seed, and budded the same season. Many of the buds have made wood to the height of five and six feet the past season. No manure has been put upon the land since they were set out.

The peach orchard which I offer for your consideration, consists of about four hundred and fifty trees, about two hundred and fifty of

them were set out last spring, and the balance, about two hundred were sown, and budded upon the ground the year previous. Cultivation of the land same as with the apple trees.

W. G. LAKE.

Topsfield, September 20th, 1847.

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JAMES B. COLE'S STATEMENT.

*To the Committee on Fruit Trees:*

GENTLEMEN,—The part of my nursery to which I have called your attention, is a lot of Apple trees, about three thousand, one and two years from the bud, mostly two. When they were budded, they were over three from the seed, two when they were transplanted. In the spring of 1844, they were transplanted into rows four feet apart, and from eight to ten inches from each other, care being taken to select those of uniform size. In August following, I budded them with the best standard varieties, mostly winter fruit. The buds took well. In the spring following, I topped them down within two inches of the bud, which was set near the ground; they have made wood very rapidly; a large portion of them have grown nine and ten and a half feet high. The land was broken up in 1843, and planted with potatoes; the soil is a light loam, eight to ten inches deep, on a fine gravelly bottom. I have manured it but once, and then to the amount of three cords of stable manure to the acre. I cultivate the ground so as to keep it free from weeds, light, and in good condition. My nursery is located within ten rods of the stopping place of the Gloucester Branch Rail Road, on Cabot street.

Yours, &c.

JAMES B. COLE.

Beverly, September 20th, 1847.

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CHARLES F. PUTNAM'S STATEMENT.

*To the Committee on Fruit Trees:*

GENTLEMEN,—I offer for premium the trees in my nursery at Salem.

Twelve thousand pear trees, of one and two years growth from the bud. The number of varieties exceed three hundred.

Fourteen thousand apple trees, of one, two and three years growth from the bud. Varieties, seventy.

Three thousand peach tree, one years growth from the bud. Varieties, eighty.

Twelve hundred cherry trees, of one and two years growth from the bud. Varieties, forty.

One thousand plum trees, one and two years growth from the bud. Varieties, thirty.

My soil is generally a loam with a gravelly bottom. The trees were all raised by me from the seed.

Yours respectfully,

CHARLES F. PUTNAM.

Salem, September 28th, 1847.

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SAMUEL C. PITMAN'S STATEMENT.

*To the Committee on Fruit Trees:*

GENTLEMEN,—Your attention has been called more particularly by me to examine my nursery as a whole—otherwise than any one particular part or branch.

I have been engaged in the nursery business the past five years, but have not confined my labors to any particular sort or kind of fruit or tree. I have now between four and five acres of land in nursery, with about one hundred thousand trees and shrubs, consisting of some twenty thousand apple trees, in their different stages from the bud up to three years old; some five thousand pear, ditto; also, some thousands of peach, plum, cherry and quince trees, with a large number of the different varieties of forest and ornamental trees.

The farm which I occupy being near the sea shore, I have found great difficulty in getting trees from the interior, as well as those from warmer latitudes, to live and grow with me—requiring some three years (when they live) to get acclimated and give any encouragement of making decent trees. This difficulty induced me, in the first instance, to grow my trees from the seed on my own farm and hence my getting into the business.

I have no doubt but many trees are condemned by people as not being sufficiently hardy to stand our climate, which, if taken from nurseries in their immediate neighborhood, or grown by them from the seed, would succeed and do well.

I doubt if at any time there was ever more interest taken, or more able minds employed on this subject, than at the present; and it would be superfluous in me even in giving a detailed statement of my own manner and method of preparing my land, sowing my seed and working my stocks, as it would be nothing new, merely reiterating what has already been published many times, and can easily be found in any of the Horticultural works of the day.

Yours, respectfully,

SAMUEL C. PITMAN.

Woodside, Lynn, September 21st, 1847.

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## ON CRANBERRIES.

The Committee on the subject of Cranberries offer the following, REPORT:

There is but one claimant for the Society's premium offered, for the best conducted experiment in the culture of the cranberry.

Probably the object of the Trustees in appointing a committee on this subject, was cheifly to obtain and diffuse information, in relation to this new department of Agricultural research. It was not to have been expected perhaps, that the claimants would be numerous, when it is recollected that generally, farmers are not among those much given to change. It ought not to be so, but when an enterprise is new, however plenteous the harvest is likely to be, the laborers are apt for a time, to be few. And so indeed have the committee found it. In the month of August, the chairman wrote to each member of the committee, (Messrs. Nichols of Danvers, Haskell of Rockport, North-end of Byfield, and Dole of Georgetown,) requesting them to collect information in relation to the subject and forward it previous to the twentieth of September. The fact that answers were received from only one of these gentlemen, known to take an interest in Agricultu-

ral improvement; from gentlemen favorably located too for obtaining information, goes to confirm the belief that as yet, very little attention has been bestowed upon the cultivation of this delicious fruit in the county of Essex. A specimen of cranberries was exhibited at the show in Lynn, raised by Abel Burnham of Essex, upon sixty four rods of high land. As his experiment however was not entered for premium, probably no member of the committee has seen it.

The experiment of Capt. Winthrop Low of Essex, is one of great interest. It establishes the fact, so far as it can be done in one year, that cranberries may be raised in perfection, upon a dry upland soil, without artificial watering or the use of loam. As Capt. Low's statement however, will be published herewith, and as something in the form of an Essay on this interesting subject will be attempted in another place, no further remarks will be necessary in this report than to state briefly, that the soil selected by Capt. Low was, most of it a sandy loam. It was perfect Indian corn land. The soil is porous, and would not retain water even if the ground were level. But it must be remembered, that in no part of the field can the water stand so as to keep the roots *saturated* any considerable time together. A small rill of water indeed passes through the field, but confined to a width not exceeding five feet, and usually not more than one foot.

The running water is within about twenty-eight feet of one side of the field, and from the row of cranberries next to the ditch back to the side of the field the ground rises, on an average of the whole distance, twenty-eight inches, being an inch to a foot. Here then, clearly, water would run off freely. On the other side of the ditch, the ground rises six feet and five inches in a distance of one hundred and thirty-two feet, which goes to show that the vines do live and grow without water, at least with no more than is needed for a crop of corn or beans.

The altitudes were carefully taken by the undersigned, with a spirit lever attached to an Engineer's Compass, having the telescope and every fixture for accurate levelling.

As evidence of the completely upland nature of the soil, it may be stated that a row of white beans was planted between every two of cranberry vines, and although it has not been a good year for white beans, Capt. Low has harvested nine bushels from the one hundred and twenty rods, a fact, showing also, that the land is not

lost to the cultivator even the first year, indeed that the bean crop has defrayed a large part of the expense.

The cranberry vines had put out runners in many cases from three to four feet long, and have all the marks and numbers of health and vigor. Sand was applied to about one half of the hills, but without any apparent advantage whatever. The attention of the committee was called particularly to this fact, because the experiments in Barnstable county seem to have been all made with sand, and it is there thought and declared to be indispensable.

There was no artificial watering. The cranberry sods were taken up, as appears by the statement below, on the 15th of May, and set out on the 16th, 18th and 19th. The undersigned is informed by Asa Lamson Esq., of Salem, that there was in that month, (May) but two and seven-eighths inches of rain. It could not have been the presence of water then, that caused every root with out a single failure to live, and nearly every one to produce berries.

It should be borne in mind, however, by way of caution, that there has been more wet weather during the last six months, than the average of the previous four years, or indeed any one of them. The whole quantity during the months of May, June July, August, September and October last, is 25 3-4 inches; while during the same months in 1846, there was but 15 7-8 inches; though in 1845 the quantity was as great as this year, wanting 2 1-2 inches.

It should be recollected too, that this is the first year, and what the effect of the winter will be without the *indispensable presence of water*, as the Yarmouth Register would say, remains to be seen. At present, the vines flourish like a green bay tree, and this, perhaps, is enough for the Committee to say. The fact that the roots could be taken dripping from their native meadow bed, on the 15th day of May, put into a cornfield soil, and then with nothing but the rain of Heaven upon them, in five short months to take root downward, and bear fruit upward, is most extraordinary. A specimen of the fruit is with the Committee, and it appears to be as good as the uncultivated fruit of the meadows. The quantity, as will be seen by the statement below, is one bushel and thirteen quarts. The land was carefully measured, by the undersigned, and found to contain 120 rods. It ought to be added here that the field exhibits a case of clean culture; weeds and grass have both yielded to the hoe.

The Committee think that Mr. Low is fairly entitled to the Society's first premium of *fifteen dollars*.

Respectfully submitted.

DAVID CHOATE, Chairman.

Essex, November 10, 1847.

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WINTHROP LOW'S STATEMENT.

*To the Committee on Cranberries:*

GENTLEMEN,—I offer for premium three quarters of an acre of land, set with cranberry vines. The soil is of a sandy loam. In November, 1846, it was ploughed. One half of the whole quantity was turf ground, the other half had been planted with corn in drills for two years. May 17, 1847, I furrowed the ground with a horse plough in drills, five feet apart one way, two furrows to each drill. On the turf part of the ground, I found it necessary to cut through the turf in order to get a suitable depth for the cranberry sod. In the drills were set 1267 sods, containing the cranberry vines; the average surface of the sod is nine by eleven inches, average thickness four inches; the sods were set four and a half feet apart in the drills, let into the ground with a spade, level with the surface, carefully leveling the whole surface of the ground round the sod with a hoe. I state for the information of others, the labor of setting on the turf part of the ground was more than double, to setting on that part which had been cultivated. I would therefore recommend to plough and cultivate the ground one year before setting.

The whole expense was as follows:

| | |
|---|---|
| Ploughing, | $2 |
| Cutting and hauling sods from the cranberry meadow, | 6 |
| Setting cranberry vines, | 5 |
| Cultivating and hoeing, | 4 |
| | $17 |

In regard to the growth of the vine, they all appear to be alive, and the runners have extended from one inch to three feet in every

direction. Oct. 14, gathered from the vines one bushel and thirteen quarts.

Between the cranberry rows I planted the white-bush bean and raised nine bushels.

WINTHROP LOW.

Essex, November 10, 1847.

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## ON FRUIT.

The Fruit Committee would respectfully REPORT:

That in this day's display of Fruits at the Town Hall, they are satisfied that it must have exceeded the expectations of the Society, there being a greater variety shown than at any former exhibition, and would compare *if not exceed* any other *county* society in the State. There were sixty-four entries of fruit by the following individuals, all without exception residents of the county. J. S. Cabot, John Newhall, Cyrus Houghton, James M. Nye, C. F. Putnam, Robert Manning, Timothy Hazeltine, Andrew Dodge, N. D. Chase, Josiah Newhall, J. Sargent, Oliver Preston, Joseph Haines, F. Tudor, Wm. G. Lake, Moses Pettingel, C. B. Holmes, Joseph M. Nye, D. N. Breed, H. A. Breed, Andrews Breed, J. Dyer, S. B. Johnson, Mark Healy, Ezra Johnson, Jonathan Buffum, John Trask, Joseph P. Gould, James Oliver, James A. Breed, M. C. Pratt, Thomas Townsend, M. Holmes, S. C. Pitman, Moody Andrews, Samuel Hildreth, Benjamin Dupar, Sarah Howe, Calvin Stevens, J. M. Ives, J. N. Saunderson, John Alley, 3d, E. B. Phillips, Abel Burnham, Shadrach Ramsdale, J. N. Buffum, A. W. Dodge, Rufus Newhall, 2d, Eben. Brown, Otis Johnson, Josiah Lovett, 2d, George Johnson, J. P. Oliver, Wm. Stearns and Erastus Ware.

It was gratifying to your Committee to observe so much interest manifested by many of the visitors, as well as the contributors in the cultivation of fruit. In the short time allowed your Committee for the examination, they have endeavored to dispose of the gratuities entrusted them, as the circumstances would allow, and unanimously award the following:

To J. S. Cabot and Otis Johnson, three dollars each; to R.

Manning and J. M. Ives, two dollars each; to Eben. Brown, F. Tudor, Moses Pettingel, W. G. Lake, Andrew Dodge, William Stearns and N. D. Chase, one dollar and fifty cents each; to J. N. Saunderson, J. N. Buffum, Josiah Lovett, 2d, E. R. Mudge, J. P. Oliver, H. A. Breed, J. B. Johnson, C. F. Putnam, James M. Nye and James Oliver, one dollar each; to Josiah Newhall, seventy-five cents.

To S. C. Pitman, Sarah Howe, George Johnson, C. B. Holmes, J. N. Nye, Andrews Breed, Mark Healy, Ezra Johnson, John Newhall, Cyrus Houghton, M. C. Pratt, Timothy Hazeltine and Erastus Ware, each one copy of the "New England Book of Fruits."

For the Committee,

JOHN M. IVES.

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## ON FLOWERS.

The Committee on Flowers, not having had time to prepare a report, would simply recommend the following gratuities:

| | |
|---|---|
| To Eliza J. Brown, Boquet, dried grasses, | $1 00 |
| To Mrs. E. R. Mudge, Boquets of Dahlias, | 75 |
| To Mary E. Chase, " " Grasses, | 75 |
| To Mrs. E. Mills, " " " | 75 |
| To Harriet C. Skinner, Wreath of Flowers, | 50 |
| To Mrs. Dyar, Pyramid of Flowers, | 50 |
| To Susan S. Ingalls, Boquet of Grasses, | 50 |
| To Mrs. George Atkinson, " " " | 50 |
| To Mrs. Philip Chase, " " " | 50 |
| To W. D. Chamberlain, " " " | 50 |
| To Otis Johnson, Basket of Flowers, | 50 |
| To Mrs. E. N. Mann, Preserved Flowers, | 50 |
| To Mrs. Peter Silver, Dahlias, large variety, | 50 |
| To Mrs. James M. Nye, Flowers and Trimming, | 50 |
| To Mrs. Delnow, " " | 50 |
| To Miss Lambert, " " | 50 |
| To Miss Haddock, " " | 50 |

To Miss Rebecca M. Gilson, Boquet and Dahlias, 25
To Mrs. S. J. Ireson, " " 25
To Miss Betsey Conner, " " 25
To Miss Martha Wing, " " 25
To John Gibben Jr., " " 25
To Mrs. S. H. Parsons, " " 25
To James Oliver, Dahlias, 25
To N. D. Chase, " 25
To Mrs. Youania Newhall, " 25
To D. C. Baker, " Washington's Letters on Agriculture.
To Stephen Oliver, Jr., " " " Agriculture.
To Mrs. R. A. Bowler, Flowers and Trimmings, Washington's Letters on Agriculture.

T. J. BOWLER,
E. R. MUDGE,
PETER SILVER,
} Committee.

Lynn, September 29th, 1847.

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## ON FARMS.

The Committee on Farms, REPORT:

That the only farm offered for a premium for the management of farms, was that of Mr. Daniel Pilsbury, of West Newbury. At the invitation of Mr. Pilsbury, your committee visited his farm in July last, and had the satisfaction of learning from him his mode of cultivation, and of witnessing some improvements he had made. The farm consists of a hundred and fifteen acres, and for a particular account of the farm its different divisions, soils, cultivation, products and improvements, the committee would refer to the account which follows, given by Mr. Pilsbury to the committee. Mr. Pilsbury has been on the farm nine years, and the committee think he is entitled to considerable commendation for what he has done and for the improvement made on his farm. More especially when it is considered that it is chiefly the work of his own hands, and that all the labor hired on his farm was but from sixty to one hundred dollars annually.

Mr. Pilsbury seems to have been particularly successful in the management of his apple trees, and to have been well paid for his labor. The amount received for apples is stated to be from three hundred to seven hundred dollars a year on an average. This the committee think must be the most profitable product of the farm and furnishes much encouragement for the cultivation of an orchard.

There is much room for further improvements on Mr. Pilsbury's farm, and the reclaiming of his meadow land is but little more than begun. Considering the present condition of agriculture in the county of Essex, and the intention of the Trustees in offering premiums, the committee are of opinion, that Mr. Pilsbury's farm, though, it exhibits instances of improvement and good management very creditable under the circumstances to its owner, yet does not come within the description of farms for which a premium was contemplated.

The committee would however recommend to the Trustees, a gratuity of ten dollars to Mr. Pilsbury.

Respectfully submitted,

FREDERICK HOWES,
LEWIS ALLEN,
DAVID CHOATE,
GARDNER B. PERRY,
THOMAS E. PAYSON.

Nov. 15th, 1847.

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### DANIEL PILLSBURY'S STATEMENT.

*Tothe Committee on Farms:*

GENTLEMEN,—My farm consists of one hundred and fifteen acres, viz; twenty-four acres of mowing, forty acres pasturing, about twenty-five acres rough upland, mowing and tillage, nine acres tillage and sixteen upland mowing, eighteen acres meadow mowing and thirty-two woodland, alders and other young wood, all of it meadow.

The meadow mowing is all in the same condition, in which I found it eight years ago, with the exception of about three and a quarter acres. One acre I have ploughed and planted with potatoes the pres-

ent season, but owing to the wet weather, I have not yet sowed it to grass. One other acre I have ploughed, smoothed and raised upon it the following crops, viz: one hundred and fifty bushels of potatoes and sowed with grass-seed in the fall; the first year it yielded twenty-one hundred of herds-grass and red-top, the second, twenty-five hundred. In the fall of the last named year, I hauled on the land about twenty loads of loam, and spread it; the third year I had from it thirty-two hundred, and this year twenty-eight hundred. Upon another acre and a quarter, I cut all the surface over with a hassock knife, let the turf dry, piled and burned it, and spread the ashes, besides hauling thirty loads of loam, and spreading it upon the same. Last year it yielded thirty-five hundred, and this year about forty hundred, mostly of blue-grass hay.

My stock at the present time consists of four oxen, five cows and a bull, one horse and one three year old colt. I raise about thirty-four tons of hay, from one hundred to one hundred and fifty bushels of corn yearly, besides from fifty to one hundred bushels of oats, and some rye. Also, two hundred to three hundred and fifty bushels of potatoes.

My orchard contains one hundred and sixty-five trees, but they are not all in bearing. (There are three hundred and twenty on my farm.) The quantity of apples raised since I have been on my farm is as follows:

| | | | |
|---|---|---|---|
| First | year, | 55 | barrels, |
| Second | " | 150 | " |
| Third | " | 150 | " |
| Fourth | " | 348 | " |
| Fifth | " | 48 | " |
| Sixth | " | 297 | " |
| Seventh | " | 357 | " |
| Eighth | " | 45 | " |
| Ninth | " | 240 | " |

All of which I have sold, except what were needed for family use, at a price varying from seventy-five cents to two dollars and a half per barrel. I trim my trees every year. I pastured my orchard with sheep, until three years since, when I ploughed it. The second and third years after coming to the place I scraped and whitewashed the trees, and did the same this year.

I make about one hundred and twenty loads of manure annually.

I put about twenty loads of swamp muck in the barn-yard in the fall, where it remains until the following fall, when I spread a part on the land which I then lay down to grass. The balance, with my winter and hog manure, I spread on my planting land, and either plough, or harrow it in. On land newly broke up, I prefer harrowing to turning under the furrow.

I have hired from sixty to one hundred dollars of labor a year, except the first year. I have built over and moved about one hundred and fifty rods of wall. I have also built about thirty rods of post and rail fence, and there are one hundred fifty rods of ditch that serve for fence, one half of which I have re-opened myself.

DANIEL PILSBURY.

West Newbury, Sept 28th, 1847.

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## ON THE DAIRY.

The committee were highly gratified to witness the contiuued interest and improvement which is manifested in this very important part of domestic duty in this county; and though many of our farmers' wives and daughters are entitled to much credit for the neatness, good taste, and skill which they have evinced in the management of the dairy, the committee are of opinion that there is yet room for much improvement in this branch of industry. Doubtless, many of the fair manufacturers of butter are more competent to give instructive suggestions respecting it than your committee are, yet the place they occupy will be a sufficient apology for a few remarks upon a business in which this county, and almost every individual in the county, is interested. It is a trite adage that "nothing is worth doing that is not worth well doing." If this maxim will hold good any where, it will in butter making. Like Jeremiah's figs, the good is very good, but the bad too bad to be eaten.

Many bestow seven-eighths of the time, care, and labor, in producing an article which is worthless for the table, which it would require to make butter which would do honor to any farmer's wife in the county, and to this society too if it were exhibited at our annual fair.

One of the greatest errors of butter-makers is thought to be that of suffering the butter-milk to remain incorporated with the butter. Butter which is not thoroughly wrought well, if not kept extremely

cold, soon becomes rancid, and as rancid butter is often found, where there is no want of salt, we attribute it mainly to this cause. The remedy is a little more patient labor.

It is of great importance that cream should be at the right temperature when churned. It is not uncommon in summer to hear the dairy maid say, "the butter has come white and soft." This we believe is commonly in consequence of churning cream when it is too warm. Cream can be easily brought to a proper temperature by bringing the vessels which contain it, in contact with ice, hanging them in a well, or putting them in a cold spring from 12 to 24 hours before churning. Any one who has not witnessed the advantage of cooling cream before churning in warm weather, will be surprised at the result.

One other practical fault is salting butter "to tastes" which are much more liable to vary than weights. One of the samples for the best product of butter presented for examination was too salt and therefore did not receive the premium it would otherwise have been entitled too. Too salt however is not a *very* censurable fault, as the objection to butter of this kind can be obviated by using the precaution that a good old lady once suggested to a clergyman, who complained at her table that her butter was too salt. "Put the less of it in your mouth at a time" was her ready reply. One ounce of salt to a pound of butter from the churn is in ordinary cases sufficient. Butter designed to be kept in a warm cellar will require more salt than if kept in an ice house or cold cellar. Weighing will not preclude the necessity of exercising judgement; it is only an assist ant. If the butter maker should err in salting, let it be on the safe side, for we know of no apology to offer for a deficiency in salting or working butter. It soon becomes rancid, and is as revolting to the taste, as the scolding epithets, or angry looks of the fair manufacturer would be to the eye or ear.

The Committee award the Society's premiums as follows:

For the best produce of June butter;

| | | | |
|---|---|---|---|
| To John Stone, | of Marblehead, | 1st premium, | $10 |
| To Jonathan Berry, | of Middleton, | 2d " | 8 |
| To Jonas Holt, | of Andover, | 3d " | 6 |
| To Allen W. Dodge, | of Hamilton, | 4th " | Colman's European Agriculture. |

For the best produce in four months, from May 20th.

| | | | | |
|---|---|---|---|---|
| To Abram B. Lord, | of Beverly, | 1st premium, | | $10 |
| To G. W. Dodge, | of Wenham, | 2d | " | 8 |
| To Allen W. Dodge, | of Hamilton, | 3d | " | 6 |
| To Jonas Holt, | of Andover, | 4th | " | Colman's European Agriculture. |

Fifteen samples of butter were presented for premium. The statement accompanying three of the samples was not such as the rules of the Society require.

For the Committee,

DAVID S. CALDWELL,

Byfield, October 1st, 1847.

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JOHN STONE'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—I present one pot of June butter, containing 25lbs. being a specimen of 168¼ lbs. made from the first of June to the ninth of July inclusive, from three cows of native breed.

Their feed was good pasture only.

*Process of Making.* The milk is strained into tin pans and kept in a cool cellar. After the cream is sufficiently risen, it is skimmed off and kept in a stone pot, and the pot is kept in a tub of ice water to keep it cool until we are ready to churn. We churn once a week. The buttermilk is worked out by hand, and the butter salted with ground rock salt, an ounce of salt to a pound.

The pot of butter here exhibited, had two ounces of loaf sugar and one ounce of saltpetre added to preserve it.

JOHN STONE.

Marblehead, September 28th, 1847.

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JONATHAN BERRY'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—I present for your inspection, one pot of June but-

ter, containing twenty-seven lbs., being a specimen of two hundred and twenty-four lbs., made between the first of June, and the ninth of July. Also, two boxes of September butter, containing twenty-five lbs., being a specimen of six hundred and eighty-two pounds from six cows and two heifers, made between the twentieth of May, and twenty-fifth of September, besides using three quarts of milk per day.

Their feed has been common pasture until August, since that time green corn fodder and fall feed.

*Process of making*,—The milk is strained into tin pans, where it stands from forty-eight to seventy-two hours ; it is then skimmed, and the cream put into pails and set in a vault prepared for the purpose. Churn once a week ; the butter-milk is worked out by hand, and the butter salted to suit the taste.

JONATHAN BERRY.

Middleton, September 28th, 1847.

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JONAS HOLT'S STATEMENT.

*To the Committee on the Dairy.*

GENTLEMEN,—I present for your inspection, one pot of June butter, containing thirty-two lbs., being a specimen of one hundred and twenty-seven lbs., made between the first of June and ninth of July, from three cows. Also, two boxes of September butter, containing twenty-seven lbs., being a specimen of four hundred and ten pounds made between the first of June and twenty-seventh of September, from the same cows until the twentieth of July, at which time one more cow was added, so that from the twentieth of July to the twenty-seventh of September, I have used the milk of four cows for making butter.

There feed has been common pasture, until August fifteenth, since that time green corn fodder once a day, raised for that purpose.

*Process of making*,—The milk is strained iuto tin pans, where it stands from forty-eight to sixty hours ; it is then skimmed and the cream put into stone pots, which are set on the cellar bottom, the whole being stirred as often as any cream is added.

We churn once a week, the butter is first washed in cold water, and

then thoroughly worked by hand, and salted with one ounce of rock salt to the pound, the following day it is again worked over and weighed, when it is fit for use.

JONAS HOLT.

Andover, September 28th, 1847.

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ALLEN W. DODGE'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—I offer for your inspection one pot of June butter, containing 25 lbs, being a sample of 425 lbs, the produce of thirteen cows from the 1st of June to the 9th of July. Also, one box containing 26 lbs. of September butter, being a sample of 1236 lbs. made between the 20th of May and the 20th of September, from the same number of cows. Besides making this amount of butter, we have used in the family, milk equal to the produce of one cow.

The feed of the cows has been common pasture only, until the middle of August, and since that time they have had the run of a few mowing lots and been fed once a day with green corn fodder.

Process of making.—The milk is strained into tin pans and placed in a cool cellar, where it stands till the cream is sufficiently risen. It is then skimmed, and the cream placed in warm weather in a well about 24 hours before churning, to cool. Churn once a week. The butter milk is worked out by hand, and the butter salted to suit the taste, with about one ounce of salt to the pound.

ALLEN W. DODGE.

Hamilton, September 25, 1847.

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ABRAM. B. LORD'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—The pot of butter I offer for inspection, was made from the milk of one cow, from the first to the twenty-fifth of the

present month, containing 31lbs., being a specimen of 96lbs., made in three months from the twenty-fifth of June. The cow went to pasture the twentieth of May, from which time she began to increase her milk till she calved.

We have used from one to three quarts of milk a day in the family until September first, and then only one. Also, have supplied her calf two months, and sold four messes of milk. The cow has been in milk eighteen months. Her food a very poor pasture, with two quarts of shorts a day since August fifteenth.

*Process of making.* The milk is strained into tin pans, stands from thirty-six to forty-eight hours, is skimmed, and the cream put in a pot, and stirred once a day. We have churned part of the time once, and part twice a week. When the the butter is formed, the butter-milk is drawn off, and the butter is washed twice with cold water and salted to suit the taste.

Yours respectfully,

ABRAM. B. LORD.

Beverly, September 28th, 1847.

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G. W. DODGE'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—I present for your inspection one pot of June butter, containing 25 lbs, being a specimen of 170 lbs. made between the first of June and the ninth of July; also, 2 boxes of September butter, containing 30 lbs., being a specimen of 475 lbs. made between the twentieth of May and the twenty-eighth of September, from six cows, the night's milk of one of them being used in the family through the whole season. The feed of the cows until about the first of August was pasturing only, and that very poor; since that time they have been fed liberally, night and morning, in the stable, with green corn fodder.

*Process of making.* Until this season, we have tried to skim our milk while perfectly sweet, under the impression that sweet butter could not be made from sour cream; but this season we have let the milk stand, until slightly changed. By so doing, we think we ob-

tain more butter, and we cannot perceive but that it is as good. It also comes much clearer. A little salt is put in the cream pail, and the cream stirred at every addition, which we think prevents the cream from becoming bitter. The butter milk is separated from the butter by thorough working with the hands, no water ever being used for that purpose; the butter is then salted with one ounce of salt to the pound; after about 24 hours it is again worked. Nothing but salt is added to either the June or September butter; the June butter is put down in layers of 5 lbs., and salt sprinkled upon each layer; the pot is then covered closely from the air, and placed upon the bottom of the dairy cellar.

Yours, respectfully,

G. W. DODGE.

Wenham, September 29, 1847.

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## ON TURNING IN GREEN CROPS FOR MANURE.

This subject is one of interest, and deserves the mature consideration of the agricultural community. The plan of renovating lands by turning in green crops, though not new, has not, so far as I am advised, been extensively practised in Massachusetts. In Essex County a few experiments have been made, and these with various success. In some parts of our country, the results of experiments have been all that the best farmers could reasonably wish. Worn out lands, favorable to the use of plaster, have, by a succession of clover, rye or buckwheat crops, been entirely renovated, at comparatively small expense. In other parts, while results have been encouraging, and in the main, satisfactory, they have not equalled the glowing descriptions published by the entirely successful. These different experiences are to be attributed, probably, to the difference in soil, location, climate, &c.

I have conversed with many of the most intelligent farmers in New England on this subject, and they uniformly agree that green crops will prove valuable to clayey soils, by rendering them more friable, as well as retentive of moisture, and to light sandy soils, by imparting to them properties of which they are deficient. But they as uni-

formly doubt the utility of this process of enriching poor lands, if a dressing of manure is required to produce the green crop, or if, by the process, the lands must lie idle until the succeeding season. They think that unless a green crop can be produced without manure, the high cost of that article will render this system of renovation too expensive. From all I can learn, however, I incline to the opinion, that the green crop system will be found useful for lands on which plaster can be successfully used in the place of manure. For other soils, it may not answer. More experiments will furnish a surer basis of decision. These, on a small scale, I trust will be made by the farmers of Essex County.

As no statements of experiment were handed in at our late annversary, I found myself at the close of that unusually interesting day, entirely in the dark as to the doings and opinions of practical farmers touching the matter of green crops; and unwilling to make that fact the chief or only matter of my report, I requested my colleagues, Dr. Nichols, of Danvers, and Henry Osgood Esq., of Andover, to furnish me with their views on the subject. With this request, they have kindly complied, and I take great pleasure in transmitting for publication in the Society's Transactions, the experiments and opinions of those gentlemen.

Respectfully submitted,

EDWIN M. STONE, Chairman.

Beverly, October 25th, 1847.

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Danvers, Oct. 15, 1847.

Dear Sir:—On the subject of turning in green or *dry* crops to fertilize tillage lands, I have a few facts to state, and an opinion to express:

1st. I once had as much corn fodder,—that is, as many corn stalks, as would grow without manure,—at least five or six tons to the acre, carefully cut and covered by the soil in the month of September, and the result was, no benefit to the land, the loss of the crop ploughed in, and half the crop of corn planted thereon the succeeding year!

Did the buried crop then really injure the soil? Perhaps not. I account for the last named loss to the fear I had of losing much of the fertilizing quality of the rich mass, which I supposed was rotting below, should I turn it up by the plough, and expose it to the sun and air by so doing, and consequently planting the corn on manure in holes, without ploughing the land at all, presuming, mistaken man as I was, that the roots of the corn would find no difficulty in permeanting a soil so rich and *spongy*, as I supposed that must be. But in reality the soil was neither rich nor spongy. The stalks, instead of rotting, had fermented and been converted chiefly into Alcohol and vinegar. The former flying off by evaporation, and the latter uniting with the alkaline or feruginous earths—forming salts less fertilizing, perhaps, than their bases as they existed in the soil previous to their union with the acid. Whatever theory on this subject we may adopt, I presume it will be generally admitted that alcohol and vinegar are poor—very poor food for animals or vegetables. And consequently, such vegetables as produce these most abundantly,—those containing much sugar—such as corn stalks, especially when green—are not the best article for the purpose under consideration. Buck-wheat and clover are probably better.

Hon. Daniel P. King, who a few years since obtained, I think, the Society's premium, for an experiment with buck-wheat turned in as manure, is decidedly of the opinion that it is not an economical method of renovating lands,—this turning under green crops,—unless it be to thus use the weeds which grow often so luxuriantly on stubles; and the crop intended to be benefitted be sown—winter rye for example—at the same time.

The opininion which I would express, is, that it cannot be good economy in the County of Essex, to endeavor to fertilize lands in this manner.

Some of the reasons for this opinion follow:

1st. One year's rent of the land is lost.

2d. The cost of seed and labor would procure and apply compost manure enough to insure a better crop the present season, and benefit the land for a longer term than any crop raised on the ground without manure and ploughed in, will ensure the next season. Compost manurers will get their reward one year sooner than the turning-in-green-crop farmers. Let us suppose a case: A. buys a farm, the soil naturally good, but run out by neglect and bad husbandry.

There are plenty of such farms to be found. He goes to work on the green-crop feritlizing plan, and expends in seed, labor, &c., $500, and puts his whole crop under the soil. Income 0. Account of farm Dr. to cash and int. $530.

B. buys at the same time a similar farm, lays out in compost and labor $500, and obtains a crop worth $530. In the spring following his account will stand:

| | |
|---|---|
| Farm Dr. to cash and int. | $530 00 |
| Farm Cr. by crops, | 530 00 |

Second year, A. lays out in labor, &c., $500, seed $530—$1030. In the spring following his account will stand:

| | | |
|---|---|---|
| Farm Dr. to cash, | $1066 80 | |
| Farm Cr. by crops, | 1360 80 | to equal B.'s porfits. |

Second year, B. lays out in labor $500. His account in the spring will stand:

| | | |
|---|---|---|
| Farm Dr. to cash, | $530 00 | |
| Farm Cr. by crops, | 800 00 | gain $300, |

Will A. get so much more than B. the second year. I think not. I think that B. will get the largest crop the second year. But in this I may be mistaken; but so long as good materials for compost can be easily obtained, I think we should do nothing to divert the attention of the farmers of Essex from the "powers of mud," as a regenerator of worn out tillage lands. The fact that there has been no claimants for the premiums offered for the best experiment of ploughing in green or dry crops—premiums, which would defray all the expenses of the experiment, and leave all the betterment of the land as clear gain, speaks loudly the opinion of practical farmers on this subject.

Yours, respectfully,

ANDREW NICHOLS.

To Rev. E. M. Stone.

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Andover, October 11th, 1847.

Dear Sir:—With regard to ploughing in green or dry crops for manure, my experience is rather limited. I have a field containing 5 acres, lying about one mile from the house, (rather too far to carry

manure as high as wages have been) the soil of which is naturally very good. One half of this field was sowed with winter rye annually, the stubble was ploughed in after haying, and the land ploughed the next June, and often again before sowing. The crop of rye growing less, I sowed one half the field with buckwheat; when it was fully in blossom ploughed it in, taking due care to cover it well, sowed with winter sye. The crop I think did not exceed eighteen bushels. My impression is, this exceeded a very little, the crop produced on that part where I did not plough in a green crop. Believing the returns did not remunerate for the labor bestowed, I have discontinued the practice of raising rye in this way.

As far as I can learn, the practice of ploughing in green crops is not attended to by the farmers in me neighborhood.

With great esteem, I am &c.,

HENRY OSGOOD.

To Rev. E. M. Stone.

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## ON DOMESTIC MANUFACTURES.

The Committee to whom was assigned the duty of examining and reporting upon Rugs, Counterpanes and Carpets, award the following premiums and gratuities, viz:

| | |
|---|---|
| Mrs. Mary Josephs, of Salem, 70 years old, Rag Rug, a gratuity of | $1 00 |
| Mrs. Elizabeth R. Norton, of Hamilton, Rag Rug, 1st prem. | 3 00 |
| Mrs. Emma E. Parris, of Beverly, Rag Rug, 2d prem. | 2 00 |
| Dorcas Gallucia, of Salem, aged 67 years, 3 Rag Rugs, one made in 13 days, and one in 14, gratuity, | 1 00 |
| Mehitable S. Tuck, of Beverly, Rag Rug, gratuity, | 1 50 |
| Gilbert Tapley, of Danvers, Yarn Rug, gratuity, | 1 00 |
| Miss Abby P. Smith, of Beverly, gratuity, | 50 |
| L. A. Butman, of Beverly, Yarn and Rug, gratuity, | 1 00 |
| Mrs. Lydia Breed, of Lynn, gratuity, | 50 |
| Mrs. Mary A. Ross, of Danvers, Rag Rug, gratuity, | 1 00 |

Maria E. Johnson, of Lynn, Patch Quilt, one finished at 8½ years of age, the other at 9, 2d prem. 2 00
Mrs. Charlotte Spinney, of Lynn, Patch Quilt, gratuity, 1 00
Mrs. Mary Coats, of Lynn, 60 years old, Counterpane, gratuity, 1 00
Mehitable H. Alley, of Lynn, a Patch Quilt, containing 2897 pieces, gratuity, 50
Miss Jane H. Hill, of Lynn, Counterpane, gratuity, 50
A. P. Goodrich, of Lynn, aged 5 years and 5 months, Patch Quilt, gratuity, 50
Stephen Osborn, of Salem, a lad under 10 years of age, Patch Quilt, gratuity, 50
L. H. Lombard, of Lynn, a Patch Quilt, containing 2750 pieces, gratuity, 50
Sarah Ellen Smith, of West Newbury, Patch Quilt, begun at 3½ years of age and finished at 6, gratuity, 50
Martha J. Nelson, of Georgetown, 8 years of age, Patch Quilt, gratuity, 50
Mary E. Taylor, of Lynn, Patch Quilt, gratuity, 50
Gilbert Tapley, for the best piece of Carpeting, 2d prem. 3 00
Gilbert Tapley, for the best piece of Stair Carpeting, prem. 3 00

THOMAS B. NEWALL,
CHARLES B. HOLMES,
N. H. P. IRESON.

Lynn, September 29, 1847.

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The committee on manufactures of HOSIERY and CLOTH recommend the following awards:

Sarah S. Bradstreet, Beverly, Open work Cotton Hose, grat. 50
Mrs. Abigail Tarbell, " aged 93 years, 4pr. of Hose, grat. 1 00
Mrs. Abigail Nye, Salisbury, " 94 " 1pr. of Child's Woolen Hose, gratuity, 50
Micajah N. Goodridge, 7 years old, 2 pr. of Mittens, grat. 25
Mrs. James King, Danvers, 5 pr. of Woolen Half Hose, prem. 1 00
Mrs. James King, do 4 pr. of Woolen Hose, " 2 00

Elizabeth P. Woodbury, Beverly, 2 pr. Merino and 2 pr. Worsted Hose, gratuity, 1 00
Mrs. Tufts, Salem, Knit Cotton Quilt and Window Curtains, gratuity, 50
Harriet Ellen Stone, Lynn, 10 years old, Tidy, gratuity, 50
Caroline H. Perry, Danvers, 1 pair of Ottomans, " 50
Caroline E. Curtis, Lynn, Lamp Stand, " 25
Margaret C. Merrill, Methuen, 1 pair of Ottomans, " 25
Dorcas A. Merrill, " Ottoman, " 50
Lydia M. English, Beverly, Sofa Pillow, " 1 00
Elizabeth Foster, Andover, Table Cover, " 1 00
M. E. Hodges, Salem, 12 years old, Patch-work Cradle Quilt, gratuity, 1 00
Mrs. Ashby, Newburyport, Stand Cover, velvet and silk pieces, gratuity, 50
Mrs. Lucy Smith, Ipswich, Cloth Table Cover, gratuity, 1 00
Miss Charlotte Flint, Danvers, Patch-work Quilt, " 50
Miss Bradstreet, Newburyport, Silk Sofa Covering, of small pieces, gratuity, 1 00
Caroline M. Spinney, Lynn, Knit Window Curtains, grat. 50

The Committee regret, that the ladies of Essex have not, the past year, given more attention to their knitting work. The few samples of hosiery exhibited induce the Committee to urge the ladies to pay more attention to this important branch of industry.

G. W. MUDGE,
FRANCIS SCOTT.

Lynn, September 29, 1847.

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The Committee on LEATHER and ARTICLES MANUFACTURED THEREFROM, beg leave to REPORT, that they have awarded the following premiums and gratuities :

Wm. H. Jewett, of Ipswich, Thick Boots, 1st premium, $3 00
Amos Gould, Wenham, Thick Boots, 2d prem. 2 00
Wm. H. Jewett, Ipswich, Calf Boots, 1st prem. 4 00

| | |
|---|---|
| Amos Gould, Wenham, Calf Boots, 2d prem. | 2 00 |
| Samuel P. Spofford, Georgetown, Best Brogans, prem. | 2 00 |
| Eleazer Parrott, Lynn, Best Pair Lady's Walking Shoes, premium, | 2 00 |
| Christopher Robinson, Lynn, Best Pair Lady's Slips, prem. | 1 00 |
| Reuben Johnson, Lynn, Congress Boots, gratuity, | 1 00 |
| Wm. Peabody, Topsfield, Boys Brogans, gratuity, | 50 |
| E. N. Pike, Lynn, Carriage Harness, gratuity, | 2 00 |

For the Committee,

A. D. WAITE, Chairman.

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The Committee on MANUFACTURES of METALS, FANCY WORK, AND MISCELLANEOUS ARTICLES remark that the exhibition in their department was highly satisfactory—and award the following gratuities:

| | |
|---|---|
| A. & J. C. Batchelder, Lynn, specimens of Woolen and Silk Dyeing, | $3 00 |
| Aaron L. Holder, Lynn, Bottles of Cologne, | 50 |
| Lucy E. Estes, Lynn, Moss Vase, | 25 |
| J. F. Nourse, Lynn, aged 11, Card Basket, | 25 |
| Herbert L. Hollis, Lynn, aged 13, Card Basket, | 25 |
| Susan P. Boynton, Lynn, Painting Water Colors, | 50 |
| Mrs. Jane C. Damon, Lynn, Vases Worsted Flowers, | 50 |
| Mehitable C. Damon, Lynn, Pencil Drawing, | 25 |
| Mercy T. Damon, Lynn, Pencil Drawing, | 25 |
| Miss Clark, Lynn, Oil Painting, | 50 |
| Miss Clark, Lynn, Imitation Chinese Table, | 50 |
| Raphael W. Pratt, Lynn, Shoe Blacking, | 1 00 |
| Alvin H. Hildreth, Lynn, Oil Painting, | 1 00 |
| Miss Hannah N. Brown, Salem, Crewel Work Chair Cover, | 1 00 |
| Samuel Sylvester, West Newbury, Wrought Horn Combs, | 1 00 |
| Hezekiah Dwinnel, Danvers, (New Mills) Carved Letter Sign, | 1 00 |
| Wm. A Chamberlain, Lynn, Soap Stone Shoulder Sticks, | 1 00 |
| Susan M. Newhall, Saugus, Lamp Mat, | 25 |
| Mary R. Kimball, Lynn, Sofa Pillow, | 50 |

| | |
|---|---|
| Mrs. S. J. Ireson, Lynn, Velvet Table Cover, | 1 00 |
| Dr. J. L. Allen, Lynn, Dental Specimens, | 1 00 |
| Smith & Chamberlain, Case Jewelry, | 1 50 |
| E. T. Brigham, Lynn, Daguerreotype Minatures, | 1 00 |
| Julia A. D. Mullen, Lynn, aged 12, Cricket, | 25 |
| Mrs. Mary C. Smith, Lynn, Miniature Easy Chair, | 25 |
| Eliza N. Small, Danvers, Ladies' Gaiter Boots, | 25 |
| Nathan Lakeman, Danvers, aged 13, Embroidered Sofa Cushion, | 50 |
| Lydia A. Tapley, Danvers, Crayon Drawings, | 25 |
| Mary P. Tapley, Danvers, Crayon Drawings, | 25 |
| Avis Keene, Lynn, Pressed Moss, | 50 |
| Herbert Porter, Danvers, aged 8, Card Basket, | 25 |
| Eliza A. Nichols, Lynnfield, Card Basket, | 25 |
| Abba Allen, Manchester, Fancy Chair, | 1 00 |
| Mr. & Mrs. Wm. Decker, Manchester, Table Screen, | 25 |
| Sophia Dodge, Wenham, Lamp Stand, | 25 |
| Sarah L. Farrar, Hamilton, aged 11, Travelling Bag, | 50 |
| Samuel Mansfield, Lynn, Hats, | 1 00 |
| Mrs. James B. Davis, Wax Flowers, | 50 |
| Joseph Homan & Co. Lynn, Large Last, | 1 00 |
| Helen M. Stone, Beverly, Crayon Sketches, | 1 00 |

Respectfully submitted,

JAMES R. NEWHALL, Chairman.

Lynn, September 29th, 1847.

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## ON GRAIN CROPS.

The Committee on Grain crops REPORT:

Two entries for premium on Indian Corn.

One by John Woodbury, of Lynn. It seems by the certificate of the surveyor who measured the lot, that the land belongs to Jepthah P. Woodbury.

The quantity raised on little more than an acre, is seventy-six and a half bushels, as per certificate.

The quantity to entitle the claimant to a premium is limited by the Trustees to not less than eighty bushels to the acre.

Therefore the committee do not consider this entry as coming within the rule for a premium.

The other entry was by Moses Pettingill, of Topsfield. It appears by the certificate accompanying the entry, that he raised eighty-eight bushels on an acre.

There does not appear to be anything out of the ordinary mode of cultivation, save the keeping the surface of the ground flat, and sowing grass seed at the last hoeing.

The corn crop was not probably affected in any way by sowing the grass seed.

Whether this mode of seeding down ground to grass, is preferable to any other, the committee are not prepared to say.

Leaving the surface flat is probably preferable to drawing up the earth high around the corn.

The roots of the corn running off from the stalk will be better secured from drought, and will find more nourishment from the manure in the soil if left flat, than if that manure and mould is piled up around the stalk, and also the roots to cover themselves are forced deep between the hills into the subsoil where no manure has been applied, and repeated experiments have shown that the corn stands equally well without hilling. The stalk when considerably grown throws out from four to six or eight roots near the surface of the ground, whether the corn is hilled high or not. These brace roots get far firmer hold on the flat surface, than on the hill, for that is loose and constantly washing down.

The committee consider the corn crop of Mr. Pettingill an extraordinary one, considering the quantity of manure applied to the land, being as per statement, only five cords. The year previous the same quantity of manure was used for a like crop, and he judged seventy-five bushels was obtained. It is not stated what condition the land was in when broken up.

The committee would recommend that the first premium of eight dollars be awarded to Moses Pettingill of Topsfield, for his crop of corn, and that the statement of his mode of cultivation be published.

MOSES NEWELL, Chairman.

Lynn, September, 29th, 1847.

MOSES PETTINGILL'S STATEMENT.

*To the Committee on Grain Crops.*

GENTLMEN,—I offer for premium a crop of Indian Corn obtained from one acre of land, and measuring eighty-eight bushels. The land was a dark loam, with a subsoil of yellow loam mixed with gravel. The corn which I planted, is the large eight rowed yellow kind, the same which I exhibited at Lynn, for two years past. The ground was ploughed in September, 1845, cross-ploughed the first of May, 1846, with the Eagle plough, No. 25, ten inches in depth, two inches in depth was then broken up. The ground was planted with corn in 1846, with five cords of manure to the acre, and in the opinion of good judges, it was estimated that there was seventy-five bushels of corn to the acre. The Indian hills were split and harrowed in May 1847, and four cords of manure from the barn-cellar was spread on the ground, and ploughed in seven inches in depth, and furrowed three feet one way, and four feet the other; one cord of fine hog manure was put in the hills. The ground was planted on the eighteenth and nineteenth of May. It received two hoeings, at each time the cultivator was used, the land was kept level, at the last time of hoeing, grass seed was sowed. The seventeenth and eighteenth of November it was cut up and harvested.

Expenses of the Crop.

| | |
|---|---|
| The Land I value at | $90 00 |
| Interest of the land, | 5 40 |
| Five cords of manure, at $6, | 30 00 |
| Heaving manure, | 1 00 |
| Ploughing, harrowing and furrowing, | 4 00 |
| Putting out manure, | 2 00 |
| Dropping and covering the seed, | 2 00 |
| Cultivating and hoeing twice, | 5 00 |
| Toping the stalks, | 1 00 |
| Harvesting and husking, | 4 00 |
| | $54 40 |

Value of crops, &c.,

| | |
|---|---|
| Half the manure, | $15 00 |
| Eighty-eight bushels of corn, | 88 00 |
| Three tons of fodder, | 24 00 |
| | 127 00 |

| | |
|---|---|
| From which deduct expenses of crop, | 54 40 |
| Net profit, | $72 60 |

MOSES PETTINGILL.

Topsfield, November 26th, 1847.

I Moses E. Pettingill measured the above corn, and testify that the number of bushels as within stated 88, was raised from an acre of ground. MOSES E. PETTINGILL.

This may certify that I measured and staked off the above mentioned acre of ground. SAMUEL CUMMINGS.

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## CULTIVATION OF FOREST TREES.

By the Revised Statutes, chap. 42, sec. 6, it is provided, that "Every agricultural society which shall receive the bounty of the State, shall offer, annually, such premiums and encouragement, for the raising and preserving of oaks, and other forest trees, as to them shall seem proper, and best adapted to perpetuate, within the State, an adequate supply of ship timber."

Prompted by this Statute provision, as well as by the generous donation of Richard S. Fay, Esq., on the same subject, herewith published, we wish renewedly to call the attention of the farmers of the County, to this interesting subject. In some of the early numbers of the Society's publications, will be found useful instruction on this subject, from the pen of Mr. PICKERING, who was always full to overflowing with all kinds of useful instruction. But as these numbers may not be readily at command, we have solicited from several gentlemen best able to instruct, such remarks as seemed to them most appropriate; and have been favored with full and interesting replies.

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Linmere, Sept. 25th, 1847.

Dear Sir:—I regret that my engagements elsewhere, prevents my attending the Agricultural fair on the twenty-ninth at Lynn. I wish

through you to propose a prize to be offered by the association under their rules of one hundred dollars, the money to be furnished by me, for the best plantation of oaks of not less than one acre ; the prevailing species to consist of the white and the black or yellow oak, to be grown from the acorn planted this autumn or in the spring. On land not now under tillage or in mowing. The prize to be awarded in 1852, and the money in the meantime to be placed at interest for the benefit of the successful competitor. Notice to be given by each person intending to compete for the prize, stating the locality of the land, that it may be viewed and registered.

I name a small sum, and a small piece of Land, in order to bring it within reach of every farmer's son whose father has—and what farmer has not? an acre of idle and unprofitable land. It will require no great expenditure of time, and no money to enable any person to plant out an acre, and the advantage to the person so doing, would far exceed the labor bestowed, even if an unsuccesful competitor. Should there be ten or more entries for this year, I pledge myself to renew the prize for the next ten years, upon the same terms.

With much regard,

Very truly Yours.

RICHARD S. FAY.

P. S. I had intended to furnish some rules to be observed in making oak plantations, but they are so conflicting as laid down by different planters, that I have concluded it will be best for every one to follow out their own ideas upon the subject, referring them however to Emerson on Trees, Shrubs, &c., for some rules extracted from London's great work. I cannot help cautioning against planting the acorn too deep, an inch in depth is enough for any of our native acorns.

R. S. F.

To B. T. Reed, Esq.,

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Boston, Nov. 6, 1847.

Dear Sir:—It gives me great pleasure to learn, from your favor of the third, that an interest has begun to be felt in the cultivation of the best of our forest trees. Mr. Fay is taking the right course

to foster and stimulate a taste for cultivation. Many persons would be glad to attempt cultivation if they could afford the expense; and the prospect of gaining the premium, will be sufficient to induce them to make the attempt. He has also, I think wisely, proposed the premiums in terms so general as to leave the shaping the particular conditions to practical agriculturists.

I am sorry that my want of experience in agriculture will prevent me from giving any suggestions of practical value.

There are two distinct objects to be regarded in the cultivation of forest trees, their pecuniary value as fuel and timber, and their use as ornaments, screens and shades. The cultivation in the two cases must be quite different. Yet I suppose the first steps must in all cases be the same. In our hard and barren soil, the land on which the seed was sown, or the young trees planted, must, for many years, be cultivated, while the plants are growing, in order that they may make any show at all even in twenty years. They will doubtless grow without cultivation, but very slowly. If an open pasture or newly cleared land should be taken, the process must be very different in the two cases. In an old, open, uncultivated pasture, the soil and subsoil are usually very hard, presenting great obstacles to the penetration of the roots. In this case, the ground must be ploughed and subsoil ploughed, that it may be opened and loosened, to the depth of two feet. After the acorns are sown, or the trees planted the plough can go only between the rows leaving the subsoil beneath the rows unmoved. This shows the necessity of getting the ground in proper condition before the operation of sowing or planting begins.

The best kinds of oak are those of the white oak group; viz: the common white oak, the swamp white oak, both of them common in Essex county, the over-cup oak and the mossy-cup, the latter to be found in Berkshire; the stem-fruited, and the vessile-fruited which grow readily in our climate, and the chesnut oak, found north and south of us, and the Rocky Mountain oak, found in rocky hills, in several parts of the state. The wood of all these eight is of great value, as fuel and for timber uses. The next group is the red oak group, containing the black or yellow-barked oak, the scarlet oak, the pin oak, and the two varieties of the red, called the red and the grey. The black and the scarlet are common in Essex county, and are valuable and very beautiful. The pin oak is found farther south, but would I think, grow readily here. The red oak is a rapid grow-

er, and a beautiful tree, but the least valuable of the oaks for fuel or timber. There is one species of the live oak group, I mean the willow oak, which grows so luxuriantly in the states but little south of this, that I have no doubt that it would grow here.

The time for sowing the acorns is in the autumn, immediately after they have fallen from the tree. It is very difficult to keep the acorns through the winter, and it is necessary only, when they are to be transported to a distance. They should be placed just below the surface. The plants must for some years be kept free from weeds. I suppose the most profitable way of doing this is that practiced in the peach-orchards in New Jersey which are for some years covered with crops of beans, potatoes, or something else suitable to the soil.

The first acre, sown or planted as a nursery, will bear plants enough for many acres of forest. As they grow larger they may be thinned out and transplanted; and when too large for that, may be gradually thinned for poles or for fuel. I suppose that either for ornament or for timber forest, it would be a great advantage to continue to cultivate between the trees until they cast so deep a shade that nothing would profitably grow.

If recently cleared forest land is to be restored to forest, ploughing may be necessary, but probably not subsoil ploughing, as the roots will have kept the ground open and porous by their own penetration. The thing to be principally regarded is the character of the previous growth. Land ought not to be chosen which has already been covered with oaks, unless the cultivator is willing to go to the expense of trenching to the depth of two or three feet, to bring to the surface unused, virgin soil.

It would be well to cultivate all the different species, as different species are adapted to different situations; the swamp oak and mossy cup to moist land, the rock chesnut to dry, rocky hills, the red to sandy, the white to clayey, the black and the scarlet to hard and hungry soils.

Perhaps it would be well to interpret "oaks" as including the oak family, and thus taking in the beech and chesnut; the former for its beauty as a tree near dwelling houses, the latter for its great rapidity of growth, and for its value as fencing and building stuff.

As the terms of the trust to the Agricultural Society are so general, perhaps it would be well to give an opportunity to those who wished to save time by forming plantations of trees already

pretty well grown. This seems to be desirable; as the growth of all forest trees, for the first few years, is excessively slow, and as, with the same expenditure, many times as many trees may be raised in the nursery, as will be left to cover the ground in a productive forest or for ornament.

It would seem very desirable to make experiments upon creating forests in situations not susceptible of cultivation, as on the hills in Lynn and in some other parts of Essex County. With this purpose, the acorns may be deposited amongst the bushes, or amongst the stones, slightly covered, and in quantities sufficient to allow for the depredations of squirrels and mice. The principal item of expense in this case, would be the fencing of the lot until the young trees should have risen out of the reach of cattle and sheep. I have no doubt that many acres now worth very little for pasture, and nothing for any other purpose, might, in a few years, be restored to forest, to the great increase of the value of the land and to the shelter and ornament of the surrounding country. The oaks best suited to this object are those of the chesnut-oak division, particularly the rock-chesnut oak, the white oak, and the black and scarlet, the beech and the chesnut would grow in this way, and, still better, the birches. Pine and larches might be introduced on the same ground which would have the effect of protecting the oaks while young; and, if the oak-forest promise well, might, as it came on, be cut down.

I know not that you will find these desultory suggestions of any value. If they should be thought so, it will give me pleasure to have contributed, however humbly, to so excellent an object.

Respectfully yours,

GEORGE B. EMERSON.

To J. W. Proctor, Esq.

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Pembroke, Dec. 2d, 1847.

Dear Sir:—On the subject of your inquiry, it is not in my power to give so full information as may be desired. My experience in the propagation of forest trees has been confined chiefly to the pine

and birch families, which are best adapted to our soils. The oaks have been planted to a much more limited extent. Acorns should be gathered about the middle of October, and planted immediately, a few days drying will often prevent them from ever vegetating. In planting there should be a very light covering with earth. It is believed to be best to plant on land recently ploughed, and some cultivation among the young trees will greatly promote the growth of them. A man in Bristol County, about fifty years ago planted a field somewhat exhausted, with acorns; when the young trees were two or three inches high, he ploughed and hoed as in a field of Indian corn; the trees grew to the astonishment of the whole neighborhood, and in less than forty years were ripe for the axe. About a century since there was an experiment in this town in planting the white oak for ship timber, the success of which ought to have encouraged frequent repetition. The grove was in cutting for timber thirty years since, and a man between seventy and eighty years old, told me, that in his boyhood he assisted in planting those trees. It is not to the existing generation, so hopeless an undertaking, as some would represent it, to plant forest trees even those of slow growth. I recollect measuring the circumference of an oak tree in West Newbury, the acorn of which was planted by Benjamin Poore, who is yet comparatively a young man, and think it measured twenty-seven inches; it was a well proportioned handsome tree; had he planted at the same time fifteen acres of similar soil, it would have become before now an inexhaustible wood-lot for the use of one family. The gentleman who has made the donation to your society, possibly may be regarded by some as an air-castle builder, but if the association are faithful in carrying out his views, of which there is no doubt, it will in less than thirty years appear that he has been the efficient instrument in raising into the air multitudes of beautiful and useful trees, and thus meeting what will ere long become a pressing want in the community.

Respectfully,

Your Obt. Servt.

MORRILL ALLEN.

To JOHN W. PROCTOR, ESQ.

## REPORT OF COMMITTEE ON ESSAYS.

The Committee on Essays, REPORT:

That they have received and carefully examined five Essays on different subjects offered for the premium. They regret that there has been no competition on the same subject. The committee have therefore had the more difficult task to estimate each Essay by its own intrinsic merits—to ask themselves this question, does this Essay furnish information not before generally known to the Farmers of Essex County, of sufficient value to justify the expenditure, (the premium and cost of printing) which must be incurred if published ? Before answering this question it became necessary to consider what Essays under consideration should be ? The answer to this last question is obviously this. They should be manuals containing all the necessary information to enable the inexperienced to cultivate and manage successfully whatever may be the subject of the Essay. Tried by this standard the Essay by the President of this Society, John W. Proctor, on the "cultivation of onions" comes nearly up to our ideal model of what it should be.

David Choate's Essay on the culture of Cranberries, although not all that could be desired, contains perhaps as much information as could be expected from any one in the present state of this new and certainly important enterprize. The cultivation of the Cranberry is yet in its infancy. More experiments and longer time, to prove the durability of success, are wanting. We see no good reason why the Cranberries may not be as much improved as Strawberries have been by culture, and that ere long either on high and dry, or on low and wet grounds they will be largely cultivated and add no inconsiderable amount to the wealth of Essex County.

W. D. Northend, in his Essay on the Pear Tree, discusses in a manner highly creditable to himself and instructive to cultivators, another too much neglected source of wealth and comfort, to this community. The best varieties of the pear, which are successfully cultivated in our midst, are certainly among the most delicious fruit the earth produces. And such, every farmer, with a little labor, can in a few years have in abundance. It is true that some young trees will die, (and what animal or vegetable will not die ?) But let no cultivator be discouraged by his losses. Let him try again, and if one tree in twenty only should live and flourish, he will be well rewarded for his perseverance.

There are now pear trees in Danvers, and probably in other parts of the County also, which have contributed to the nourishment and gustatory pleasure of numerous individuals of the present and past generations, for more than two centuries. We allude to the Endicott pear tree, and the Hawthorne, or Prince pear tree, on the Nichols* Farm in North Danvers. The planters of these trees conferred an amount of happiness on mankind, of inappreciable value. Who will go and do likewise ?

The Essay, by Rev. G. B. Perry, on the cultivation of the oak and other forest trees, is a valuable and seasonable offering to those who intend to become competitors for the Fay-premium offered by the Society, and all philanthropic farmers who are willing to do something for posterity, and at the same time erect a monument to their own memories that may prove more durable than brass.

The Committee recommend to the trustees that there be paid to John W. Proctor, Rev. Gardner B. Perry, David Choate, William D. Northend, and John M. Ives, a premium of *ten dollars* each, for their several Essays, and that the same be published.

Per order, ANDREW NICHOLS.

*The body of this tree, still remaining, is over nine feet in circumference, and there is traditionary testimony that it is a sucker from a pear tree, formerly on the Hawthorne Farm, Salem.

# AN ESSAY

## ON THE CULTIVATION OF THE ONION,

BY JOHN W. PROCTOR,

OCTOBER, 1847.

The culture of onions has increased so much, within a few years, in this vicinity, that it has become one of the staple products of the County. In the town of Danvers, more money is realized from the sale of the onion, than any other product of the soil. Products of so much value, and commanding so much attention, are fit subjects of inquiry; and if there be any facts relating to their cultivation not generally known, it may be useful to have them brought forward.

In making these inquiries, our attention has been directed almost entirely to practical cultivators, without reference to scientific treatises. Our intention being to tell their story, as near as possible, in their own way.

We shall treat of the subject in the following order:

1. The preparation of the land.
2. The manure best adapted to promote the growth.
3. The raising and planting of the seed.
4. The care necessary to be applied while growing.
5. The blights and injuries to which the crop may be liable.
6. The time and manner of harvesting.

1. As to the preparation of the land.

Differing from most other crops, the onion grows well, on the same land for an indefinite number of years. Instances of continued appropriation of the same pieces of land to the growing of onions, for *ten*, *fifteen*, *twenty*, and even *thirty years* have come to our knowledge. It is the opinion of many that the crop is better, after the land has been thus used a few years, than at first. Whether this arises from any influence of the crop upon the soil, or is the effect of continued dressing of manures, we have no means of determining. This is certain that the qualities of the soil necessary for the production of good crops are not exhausted by continued cultivation.

Rarely, if ever, have we known the onion sowed upon the turf when first turned over. It is usual to subdue and pulverize the soil, by the cultivation of corn, or some other crop. Not unfrequently

the first year with corn, the second with carrots, and afterwards with onions. It is important, before the seed is sown, that the surface be mellow, finely pulverized, and clear of stones or other impediments, to the free and unobstructed use of the machine for this purpose. The finer and more uniformly mellow the surface is made, the better. Shallow ploughing, say from four to six inches deep, is usually practised. Once ploughing only in the spring, and frequent harrowings, are practiced. Before the ploughing the dressing is usually spread upon the surface of the field, so as to be covered, or intermixed in the furrow. The mingling and subdivision of it, is effected by the use of the harrow.

Whether it would not be advantageous occasionally, to stir the land to the full depth of the soil, is a point on which there is a difference of opinion; most of the cultivators inclining to the use of shallow ploughing only. There are some facts tending to show, that occasional deep stirring of the soil, does no harm to the onion crop, but on the contrary is decidedly beneficial. As for instance, onions do better where carrots have grown the year preceding, than after any other crop. The carrot necessarily starts the soil to the depth of ten or twelve inches. Possibly there may be some other influence upon the soil from the plant itself. Our belief is, that the thorough and deep stirring of it, is the principal preparatory benefit.

2. The manure best adapted to promote the growth.

Any strong manure, well rotted and finely subdivided will answer. But the general impression seems to be, that manure from stables, where the horses are freely fed with grain, is the best; and that it should be at least one year old, because it will not be sufficiently rotten in a less time. All agree that the dressing for the land should be kept near the surface, well mixed, and as fine as possible. Though we have seen the present year, a very superior growth of onions, where green manure from the barn-yard was applied in the spring; but particular pains were taken to subdivide and intermingle it with the soil; and to bush-harrow the land so thoroughly, that very little of the manure was exposed upon the surface.

*Muscle-bed* is frequently used upon onion land. A portion of this is deemed by some almost indispensable. We have known the continued use for half a dozen years in succession, even without other manures, with a continuation of fair crops; but the general impression is, that it will not do to repeat the application of muscle-bed many

years in succession. The effect being to harden the land, and make too much of a crust about the surface. Without question the effect of the muscle-bed is congenial to the growth of the onion, giving those who live in the vicinity of rivers where it is found, a special advantage over those who are remote from it.

*Leached ashes* are also a valuable manure in the cultivation of the onion; more so when *leached* than before. All kinds of ashes are advantageously applied on onion land.

*Compost manure* made of meadow mud and droppings from the cattle, we have known advantageously applied on onion fields; but we have many doubts as to this being the best application of this kind of manure. A more lively and quickly operating manure is better for the onion; one that will give them an early start, and advance them as fast as possible, in the first part of the season. The utmost vigilance and activity is used by our cultivators in getting their land ready, at an early period of the season, for the reception of the seed. It is the first field labor of the Spring. The use of compost manure will depend much upon the constituents of the soil with which it is mixed. If the soil be a sandy loam, with a porous subsoil, the compost will do tolerably well; but if it be a black soil, with a clayey subsoil, such as are most of the lands where onions are raised in this vicinity, stable manure, or muscle bed, or leached ashes, or a mixture of these, will be a better application. The quantity ordinarily applied annually, is from four to five cords to the acre. Whatever is applied, should be generously applied. It will be vain to expect full crops of onions, without full manuring. When the manure is collected, it is benefitted much by a free application of *elbow grease* in its preparation. The cultivator of the onion must work early and late, and in good earnest. Nothing short of forcible and persevering labor will answer. No man who is afraid of *soiling his hands or the knees of his trowsers* will do to engage in this business. Close work at the proper time, is the only sure guarantee of a good crop.

3. The raising and planting of the seed.

In relation to the onion, as well as all other vegetables, much care is necessary in the selection of the plants for seed, and the cultivation of the seed. By the application of this care, the character of the article raised may be modified, almost at pleasure. Until within a very few years, the *flat onion*, hollow about the stem, has been preferred. The thinner the handsomer. But it is now under-

stood, that the *round, thick, plump onion* is preferable in many respects. It is thought to yield better, and weigh heavier. It is found to have a decided preference in the market, commanding *ten per cent* more in price. By selecting those of most desirable form, which ripen the earliest, and carefully setting them for seed, where they will not be exposed to the impregnation of the baser sorts, the quality has been materially changed and improved. These peculiarities in the onion were first noticed in this vicinity by Mr. Daniel Buxton. He was careful to select in the field before the crop was gathered, such onions as he preferred, and to preserve them for seed.

By so doing, the seed which he raised soon acquired a character superior to any other. Many of those who had been accustomed to raise their own seed in the ordinary way, laid it aside, and purchased seed raised by Mr. Buxton, and found their account in so doing. There are three varieties of the onion raised in this vicinity. The *Silver-skin*, the *Red*, and the *White onion*. The *Silver-skin* is the predominant species, and more cultivated than all others. The *Red* is preferred by some,—sells better in some foreign markets, but does not yield so abundantly. The *White onion* yields as well as either of the others, is milder and preferable for immediate use; it will not keep as well, and is not fit for exportation; which is the principal use made of our onions.

The common drill machine is used for the distribution of the seed. This admits of regulation, so as to scatter it more or less thick; and in this there is room for the application of sound judgement. The usual quantity sown is about three pounds to an acre. As a general rule, we should say, one pound of good seed was the proper quantity for a quarter of an acre of land of good quality well prepared. It is desirable to have the seed planted as thick as they will grow fairly, both to secure a full crop, and prevent the onion growing too large. Onions from one to two inches in diameter being preferred to those of a larger size. The skilful cultivator carefully looks after all these little incidents relating to his crop.

4. The care necessary to be applied while growing.

Much of the success of the crop depends on this care. At first the plant is extremely tender, and requires to be handled with much caution. Any derangement of the fibres or roots of the young plant, is attended with prejudicial consequences. Much attention is necessary to prevent weeds gaining the ascendancy; and in eradicating the

weeds. Want of due care in this is often the cause of failure of a crop. We have known the present season, a highly promising crop to be injured *twenty per cent* at least, by permitting the weeds to remain unnoticed *one week too long*. This is especially true when there has been a want of due care in preventing the scattering of the seeds of the weeds on the land in the years preceding. Care should be taken, both that no weeds shall ripen their seed upon the land, and that no weed seed shall be found in the manure. In this respect warm stable manure, muscle bed and ashes have a decided superiority over all other manures. Perhaps there is no plant more liable to be injured by weeds than the onion. The fibres it sends out are very numerous, minute, and tender; any fracture of any of these necessarily impairs the perfection of the plant. When the land is in proper condition, two careful weedings are all that may be necessary. The rest of the stirring of the ground that may be required to promote the growth, can be done with the *onion hoe;* an instrument, specially constructed for the purpose, moving on wheels, and adapted to the width of the rows. This hoe was invented by Mr. Joseph Bushby of Danvers, an intelligent and successful cultivator of garden vegetables, about twenty-five years since; and was used by himself and neighbors only for about ten years. It has now come into general use, and saves much of *back-aching labor*. The usual distance between the rows is *fourteen inches*. This can be varied according to the quality and condition of the soil. Keeping the ground well stirred, loose and free of weeds, greatly facilitates the bottoming of the onion. There is no plant that will better reward diligent care in the cultivation. The entire difference between a bountiful crop, and no crop at all, often depends on this. The old maxim, "a stitch in time saves nine" applies with great force in raising onions.

5. The blights and injuries to which the crop may be subject.

So far as we have observed, this crop is as certain as any other that is cultivated. We know that onions will not grow without a reasonable proportion of heat and moisture; but we have rarely, if ever known, an entire failure of the crop, where due diligence has been used. There are occasionally blights, the causes of which we have not learned. The more prominent will be noticed.

Sometimes we have seen the plant covered with a small insect or *louse*, that gives the top a white or light colored aspect, and stops and stints the growth. These make their appearance about the

time the bottoming commences. We have heard their appearance charged to the use of muscle-bed,—but whether they are limited to land on which muscle-bed has been used, we cannot say. We think not. We think they are natural associates of the plant. The effect of them is to diminish the *quantity*, but not to materially injure the *quality* of the vegetable.

The crop is sometimes injured by a *blue mould* that gathers on the tops, occasioned by fogs, or an excess of moisture from frequent and long continued rains.

There is a *worm* or *maggot*, occasionally found upon the onion plant, in the early stages of its growth, causing it to turn *yellow* and die. This insect will be found in the bulb, originating from eggs laid upon the leaves, by a small ash colored fly, the scientific name of which is said to be *Anthomyia ceparum* (See Transactions of the N. Y. State Agr. Soc. for 1843, page 135.) It comes to maturity in less than a month; so that there may be several generations in the course of the season. Their appeance in this vicinity is rare. Pulverized charcoal and fire have been found the most effectual remedies, against the ravages of this class of depredators.

The most annoying enemy of the onion, is the *cut worm*, or *grub worm*. It probably is the same described by Dr. Harris, in his Report on the Insects of Mass. injurious to vegetation, page 324, there called "*Agrotis devastator.*" And in the 1st vol. of Silliman's Jour. of Science, "*Phalœna noctua devastator;*" though Dr. Harris does not mention the *onion* as among the plants upon which it feeds; probably considering it, like *tobacco* as *too noisome* to be used by any decently civilized being. They are said "to seek their food in the night, or in cloudy weather, and retire before sunrise into the ground, or beneath stones or any substance which can shelter them from the rays of the sun; here they remain coiled up during the day, except while devouring their food, which they drag into their places of concealment." The remedy for these worms, suggested by our cultivators, corresponds nearly with that proposed by Mr. Foote of Berkshire, "*to catch them and pull their teeth out.*" This being effectually done to all, their operations will be of a limited character. When this is omitted, we have sometimes known whole fields almost entirely cut down by these rapacious devourers. They sweep clean where they go, not suffering even the weeds or any other herbage to flourish. They are more frequently

found on *old* ground than on *new;* and particularly where the ground has been covered during the winter with *chickweed or other vegetable substance*, on which the eggs from which they originate may have been deposited. Hence a benefit of clearing the ground of all vegetable matter or other obstructions, in the Autumn after the crop is gathered. This clearing also facilitates the early planting in the Spring. Autumnal ploughing, as it exposes the soil more fully to the action of the frost, and disarranges all abodes for the winter made by insects, may have a tendency to diminish their number.

6. The time and manner of harvesting.

When the tops begin to wither and fall, then it is usual to start the onions from their bed and throw them together in rows, say eight or ten growing rows into one. After they have lain thus about one week, they are stirred and turned with a rake, and in about one week more, when the ground is dry, and the weather fair, they are gathered up by cart loads and taken to the barn. Here they are sorted and cleared of refuse leaves, and then they are in a condition to be *bunched* or *barreled.*

It should be remarked, that a large part of the labor of *weeding*, *gathering* and *sorting* the onion, can be performed by children from *ten* to *sixteen* years of age. Boys of this age, when properly instructed, will do about as much as men. They are more nimble and can come at the work with greater facility. The sorting of the onion is frequently done by girls as well as by boys. From *three* to *five* dollars a week, at one cent a basket, are usually earned by them during the period of harvesting—which includes the months of September and October. After the crop is taken off, if the surface is sloping, it is useful to plough furrows about one rod apart, to keep the surface from washing. Unless this is done, all the herbage being gone, much of the soil will be likely to be misplaced, by the melting of snows and running of water in the Spring.

The inquiry arises, whether the growth of the onion is limited to soils of particular character, or whether it can be cultivated upon any good soil, with proper attention. We know that there is a popular impression, that there are but few places in which the onion can be cultivated advantageously. So far as our own observation has extended, this impression is in a great measure erroneous. Like every other plant, the onion grows best on very good soils, in very good condition. But we have known very fair crops, on plain, light land,

after the same was well saturated with *manure, muscle bed* or *ashes.* A good substratum must be laid before a good crop can be expected; and this being done, a crop may be expected on almost any soil, that will support other vegetables.

If we were asked, what course is best to be pursued with land, on which onions have never been raised, to bring it into a condition for a successful cultivation of the crop; we should say, begin by ploughing to the full depth of the nutritive soil, and during the first and second years, thoroughly subdue and mellow the soil by the cultivation of crops of corn and carrots, with liberal dressings of manure; then thoroughly incorporate with the soil a dressing of strong manure, and muscle bed, just covering this dressing; then harrow the surface thoroughly, and clear it of all roots, weeds, or other obstructions; then apply a coating of lively, well rotted manure to the surface and bush harrow it; and then it will be in a condition to receive the seed, which is to be inserted as soon as the opening of the Spring will admit of its being done.

We are aware that we make the raising of the onion dependant upon severe labor and vigilant attention. We know that it cannot be successfully done without these. But it is not labor lost. No cultivation, within our observation, better repays for the labor and incidental expenses. We have known, the present season, acres that have yielded their owners, a net income of more than *two hundred dollars;* and we know that a man with two boys, can well attend to half a dozen acres of such cultivation. Surely, when as at present, there is no limit to the demand for the article, and a ready cash market, those who have *acres* and are willing to labor, need not be in want of a fair compensation for their labor.

As samples of the present years produce in the town of Danvers, we state the following that have come under our notice.

| Names. | Acres. | Produce. |
|---|---|---|
| John Peaslee, | 3 | 1980 bushels. |
| Daniel Osborn & Son, | $1\frac{1}{5}$ | 870 " |
| James P. King, | $1\frac{1}{3}$ | 660 " |
| Aaron C. Proctor, | $1\frac{1}{4}$ | 600 " |
| E. & D. Buxton, | $6\frac{1}{2}$ | 2750 " |
| Henry Bushby, | 4 | 2000 " |
| Joseph Bushby, | 3 | 1500 " |

Yielding an average of more than 500 bushels to the acre.

# AN ESSAY

## ON THE CULTIVATION OF THE OAK, AND OTHER FOREST TREES,

BY G. B. PERRY.

Our "Good Commonwealth," with a wise and liberal forethought for the prosperity and comfort of after generations, has by her constituted authorities, offered through the County Agricultural Societies, liberal rewards to encourage and extend the cultivation of the oak and some other kinds of the forest trees. So far as I have knowledge, these offers have been followed with very limited success. Either from real or imaginary difficulties attendant upon forest cultivation, very few in this, and it is believed in other counties, have made any extended efforts either to raise the trees for their own benefit, or to entitle themselves to the premiums. These difficulties I have supposed, and still suppose, are more imaginary than real, while at the same time they are operating very hurtfully in regard to a great public and private injury.

Recently, Richard S. Fay, Esq. of Lynn, in a spirit of a wise and noble spirited citizen, has made a generous gift to the Society in this county, in the hope the society being enabled to offer still greater inducements, might be instrumental of turning the attention of some of the citizens to this important subject. Wishing as far as may be to help forward an undertaking so closely connected as I believe this to be, with the best interest of the County and State, I have concluded to embody a few observations embracing either thoughts that may have occurred to my mind, or facts that may have fallen under my observation. These I submit to the Officers of the Society, to be disposed of as they will.

As the offer of R. S. Fay Esq., is confined to the producing of the oak, I shall restrict myself to its cultivation, if not exclusively, at least very nearly so.

Before I proceed I will introduce a remark that may be of service to those about to engage in this matter, which is, that in very few of the cultivated or forest trees is the hybridizing process so prevalent as with the oak. To such an extent does this manifest itself, that I have no recollection of having been with a man into any field

or forest covered with this tree, however extensive and particular his previous observations might have been, who did not discover trees possessing some peculiarities which he had not observed before, peculiarities which if not great enough to constitute a new species, were enough to attract notice and interest the feelings of those who delight in the wonderful and varied works of God.

Practically this observation will show that in selecting seed, where a particular kind of tree is especially desired, that the acorns should be taken from bearers which stand at a considerable remove from others, or at least from lots where those alone prevail, which in character are like those it is wished to raise.

Taking into consideration the character of the soil in most parts of this county, and the probable use to which those who shall reap the field which we sow, may wish to devote the produce, I am inclined to believe that good economy, and good taste unite in recommending that the chief attention should be confined to the cultivation of the white, grey, yellow and black species. These have each their peculiar properties, fitting them for special uses, and each one for a service which the others will not so well answer. While together they meet most of the necessities which the other kinds growing freely in this climate would be able to supply. Other kinds may be raised as matters of taste, a pleasing variety would thus be given to our scenery, and it is believed in doing this, profit and pleasure would be found to result from the same enterprize.

Two important questions present themselves here, on the right answer to which depends in no small degree the success of this enterprise.

The first is, ought the acorns to be planted in the nursery, or in open ground. In the fall, or in the spring.

The second. How shall the young trees be cultivated and trained.

In respect to the inquiry whether the acorns should be planted in the open ground or in the nursery, there exists a difference of opinion among those who have enjoyed the best means of information, whether we consider the extent of their inquiries or the results of their own experiments. The same is true in relation to fall and spring planting. I will here introduce some extracts bearing upon these subjects, as also some which refer to the expediency of cutting down the tops of young trees in order to encourage a more

vigorous growth, and other particulars connected with the subject generally.

I have concluded to present these statements in one body, thinking upon the whole that the end for which they are produced, would be most fully answered, and that any reference which it was wished to make to them, would be more easily effected.

EXTRACTS.

What is the best time to sow acorns? and how may they be best preserved till sown? are questions which admit perhaps of considerable difference of opinion. No doubt, nature seems to dictate that the acorns should be committed to the ground as soon as they are perfectly ripe; for they will often begin to sprout even before they fall from the tree. But then, if sown immediately in autumn, they run great risk of being devoured by birds, mice, and other vermin; while on the other hand, if kept till towards spring, and in too dry a state, many will perish: and, again, if in a moist one many more will sprout out to a considerable length and thus (as it is supposed) exhaust their strength by premature vegetation. From an experiment made this year quite accidentally, it would seem that neither the late sowing nor the sprouting of the acorns is at all prejudicial to the future growth of the young plants.—*Gardener's Magazine.*

Evelyn says, that sowing acorns, &c., in the autumn, appears to be the most natural method; but the destruction made by the field mouse, both at the time of sowing and during the winter, has induced many gentlemen to prefer the spring sowing to the autumnal one.—*N. E. Farmer.*

Oak coppices are made in France by sowing the acorns in the fall of the year along with wheat or rye, or some other winter crop. The acorns are sowed broadcast, as the grain that is sowed along with them. By the time that the grain comes off the ground, the oaks get to be two or three inches high, and are then allowed to grow into a coppice.—*N. E. Farmer.*

I wish that all gentlemen thought on the coming scarcity of oak timber as I do, they would not walk through their farms, without a pocket full of acorns to drop in the hedge-side, and then let them take their chance.—*Lord Collingwood.*

South, a practical planter says, that any oak in a good soil and situation, will in seventy-five years, from the acorn, contain a ton of timber, or a load and a half of square timber. The same oak at 150 years of age, will contain about eight tons of timber, or twelve loads of square timber.—*N. E. Farmer.*

The author of the Agricultural Report of Scotland says: "Trees may be raised by sowing seed on the spot where they are to grow." Mr. Miller says: "Oaks are best produced from the acorns in the places where the trees are to remain, because those which are transplanted will not grow to so large a size nor remain so long sound. In removing any tree, *some* injury must be done to the fibrous roots, and especially to the tap root, and the oftener the tree is removed the greater will be the injury.

In this respect, a tree which is permitted to grow in its original site, has an advantage over the transplanted tree. Some writers, however, maintain that two or three times transplanting a tree is necessary to give it a fair start. Every root and fibre, they say, which is cut off in order to transplant a tree is succeeded by several roots and fibres, the number of vegetable mouths by which the plant procures food from the soil

is thus increased, and a more rapid and vigorous growth is the consequence. The acorns for planting oaks should be taken from the largest and most thrifty trees. They should be gathered as soon as they fall in the autumn, and kept in a box of sand till spring. Then open them and plant such as have sprouted, allowing them no time to dry.

Bradford, Nov 30th, 1847.

There is but one difficulty in raising oaks. Like all large seeds they are apt to rot if planted in Autumn. The best method is, to put them into boxes with dirt intermixed, and let them freeze very hard; place them in a cold, shady place, and cover them with straw, quite thick. They should be kept frozen to prevent rot, until the ground is well settled. A hole in the ground, on the north side of a building, would be the best place.

There is no difficulty in transplanting them.

Respectfully Yours,

WILLIAM HALL.

Mr. Hall is a very successful cultivator of trees. A man as certainly intended for that business, as was the late worthy Mr. Manning. G. B. P.

This plan, Mr. Allen says in a subsequent communication, he carried out and much to his satisfaction. Young and vigorous shoots were soon thrown out, which in a few weeks become as tall as those which he cut off. Good shaped and much more thrifty.

Again, after several unsuccessful trials in planting (seeds of forest trees) on sward land, I have ceased repeating them. I plough in June or July where I intend to plant.—*M. Allen.*

Our forefathers did not, so far as we are aware, plant forest trees for our benefit, they did not anticipate probably that our supply would so soon be likely to fail us; but they planted *fruit trees* for our benefit; and from common *justice*, to say nothing of benevolence, we ought, as we can anticipate their *wants* to plant for the benefit of posterity.—*F. G. Fessenden.*

The growth of oaks from the acorn is at first extremely slow. Whoever undertakes thus to rear a forest, must exercise long patience and labor, as all philanthropists do for the benefit of those who will live after him.

Young trees from acorns are apt to be shrubby and ill shaped. None of mine appear as though they would grow to sightly and valuable trees. Some of them have been planted five years, and do not exceed fifteen inches in height. My present intention is to cut them down to the ground about the first of next May.—*M. Allen.*

The best time for planting any kind of forest trees, I suppose, is at the season when the seed is matured and naturally falls on the earth, in the months of October or November. Some writers recommend the spring as preferable, but it is presumed no other advantage can attend spring planting than something of greater security against the devouring jaws of vermin.—*M. Allen.*

A writer in the New England Farmer, who styles himself "An Observer of Nature," says that the white oak adapts itself to almost any soil, is of fine appearance, and the repute in which its timber is held is too well known to require comment. It grows moderately fast, and in ordinary situations it attains a diameter of six or eight inches in twenty years.

The same writer observes that ornamental forest trees can be introduced with ad-

vantage and profit in belts for the protection of gardens, orchards and dwellings from noxious winds. And in these undertakings, with a little attention, beauty and economy can be combined.

Among the trees which he says can be thus introduced, is the oak.

In the fall of 1834, I planted between one and two bushels of white oak acorns, in rows ten feet apart, made by ploughing a furrow, but from acorns, not a single tree came up. I presume the early frost of that year killed the acorns before they were ripe.—*N. Webster.*

A. Nichols, M. D. of Danvers, whose extensive scientific enquiries and nice practical observations, give great importance to his opinion, thinks that the oak trees cannot be removed from the nursery to the open lot, without discouraging loss and would therefore recommend field planting.

The second question is in respect to the treatment of the young trees For many years, and to a very great extent, after the cultivation of the forest trees began to attract some attention in this county, there seems to have prevailed an opinion, that they flourished best where the earth was not moved around them, that in fact all attempts at cultivation with plough, harrow, spade or hoe, was contrary to the laws of nature, and they would be very hurtful, if not absolutely destructive. I have often heard statements to this effect made, and have several documents to the same effect, from those whose opinion on the subject is entitled to high consideration, and the impression upon my mind is, that the same opinion to some extent is still entertained. This opinion it is thought, may have had its rise from experiments unhappily made, growing most likely from the want of a proper regard to the fact, that most trees standing near together, the roots run very near the surface. The culture was too deep, and many of the roots were either actually cut off, or much injured in the operation. But whatever may have given rise to this opinion, or may still give prevalency to it, there are are so many facts before the public of a different result as to justify the belief that when right culture is bestowed the happy fruits of labor will show themselves as fully among the wild trees of the forest, as in the reclaimed ones of the orchard.

In the cultivation of the oak so far as the moving and loosening the soil is concerned, care must be taken not to injure the roots. In trimming, it should be remembered that it is an increase of timber, and not as in an orchard, a crop of apples which should be consulted.

When a seedling oak springs up, whether from an acorn accidentally falling upon the ground, or placed there by the hand of

man, it will for the first year appear very weak, and seem rather inclined to spread itself out like a creeping vine upon the earth, than to lift itself toward the higher regions. Few whose minds have never been instructed on the subject, would be forward to believe that from such beginnings, such great results were likely to follow. That this fragile plant should grow to be the giant of the wood! Such, however, are the mighty workings of those innate principles which are called the laws of the material world. In cultivation, it becomes of practical importance whether this apparently feeble plant should be suffered to remain till it gathers strength to raise itself upward, or after it has spread out its roots to a considerable extent, and become thereby able to collect a considerable nourishment, it may not be wiser to cut it down near the earth, under the expectation justified by many experiments, that it would send out a sprout, which, under these circumstances, would rise up straight and soon attain a greater length even than the original stock that had been taken away. The principal reason urged by those who disapprove of this cutting down, is the alleged fact that sprouts will never or rarely attain the size to which the original stock would acquire, nor would they be so compact, strong or enduring. When the sprouts spring from the stumps or roots of large trees, there can, I apprehend, be little doubt of the validity of this objection, so that if timber is the mark looked forward to, it probably must be unwise to depend on a growth sprung up from the bottom of large trees. If fuel for the fire is the result sought, the objection has less weight, if we feel any regard should be paid to it. It is very likely, indeed, in most instances, that from the great rapidity of growth, that more would be gained from the increase in bulk than lost in the want of solidity. In the present case, however, if the *cutting* process be adopted, the tree is so small and bears so small a proportion to the size of a fully developed tree, I must think the objection has but little force, were it true, as this supposes it to be, that the first shooting out of the tree did actually as time advances, rise up from its recumbent state and stretch its head heavenward. My own belief is, however, that this is seldom the case. From what observation I have been able to make, I am convinced that the top first thrown out does almost universally die either before or after a new sprout from near the earth starts forth, and that this process of nature is only seconded by art when the top of the

seedling oak, whether in the field or in the nursery, is taken away to facilitate a better shaped and more vigorous growth. I have witnessed this process in multiplied instances, not only in the oak but in many other forest trees. Very few exceptions, it is apprehended, can be found among the young seedlings which spring in the shade, produced from whatever cause, and not many even in highly cultivated nurseries, even where the young plant stands fully exposed to the brightness of day. I have raised a great many forest trees of different kinds. I have in my nurseries but few which I supposed would not be improved by removing the top after having attained the age of three or four years. I have sometimes judged it necessary to subject them to a second, and in some instances to a third process. And I cannot believe from present appearances, that those who in the future will be benefitted by them, will find in consequence of this that they have lost in the compactness of the wood, strength or durability. I wish a fair experiment could be made. In this way the question can only be fully settled. I know well that it must require many years for a plantation put out for this purpose to mature. More years indeed than any of the present generation may live to enjoy, or to labor, but there will come other and many generations, who would be great gainers from such an establishment, who without our forethought, would be left nearly, or quite as uncertain as we are, and who could no more see the results of their own efforts, than we of the present, can of ours. As things are, the fathers must labor, and their children, or children's children must reap the benefits of their labor.

How long it takes an oak to reach its ordinary growth, I do not know that there are enough well attested facts, certainly I have them not in my possession, to justify me to speak with definiteness. The subject is an important and interesting one, and there is scarcely reason to doubt that should one devote a little time, he might obtain much useful information. There must be many trees of no inconsiderable age and size in the county, whose springing up must be known and remembered by the aged of the present generation, or handed down from the generations before their days. The society in my apprehension, could hardly do a better service, than by some pecuniary consideration to encourage justifiable enquiry. It would be of great advantage in their present interesting operations. One fact I will venture to state, proving a personal knowledge of the trees, and of

their age, from information by the gentleman on whose property they stood. In this instance there are four yellow oak trees standing nearly in a row. The two outside ones being about twenty feet apart. They stand on the side of a hill, soil a sandy loam,—are forty years old. The largest is estimated to contain two feet or more of wood, the other not so much.

I have as proposed, collected and brought together these statements, they are all of them from sources which entitle them to the respectful consideration of all who wish for information on the subject concerning which they speak. The inference which ought to be drawn from them, may be a question of some doubt. It certainly is likely to be of some perplexity to those who are about for the first time to engage in tree cultivation, and may well raise some doubts in the minds of those who have entertained confidence that they had certainly found out the best way. It will not be my purpose at this time, to go into a comparison of the actual superiority of one or the other of them, though I am willing to state it as my opinion, that in a large portion of cases in this county where it is proposed to cultivate any number of what are rightly called the *king of the woods*, that it will be effected with a less expense of labor, and in a shorter space of time, by cultivating the trees in nurseries, and keeping them there till they are six or more years old, before they are transferred to an open lot. I think it not unlikely, that in many instances they would be kept with advantage in the nursery till they had attained to the age of ten years, and even more. I am inclined also to the belief, that the spring is a better season than the fall to plant the seed. I will just add, that in most instances the seed is likely to be covered too deeply.

Or an inference which I think may be fairly drawn from the authorities embodied is this, that it is by no means so difficult to produce and bring forward the young, plant as has been generally believed. We are not shut up to one course, various times and manners of planting have been successful, and the rules of different manners of cultivation have given equal satisfaction. Oak trees then can be raised, and they should therefore be raised, because many would be benefitted thereby.

Of the general fitness of our soil to the production of the oak in its full size, and greatest strength, we have pleasing demonstration in the majestic oaks which still remain scattered over most of

the county, as well as in the safety with which our majestic ships built of our wood, and fashioned by the wise craftiness of our own men, have resisted, and out-lived the mighty lifting up of the ocean-wave.

The object which the society is pursuing, and which the worthy individual referred to above, is so generously helping to carry out, is one of great interest. I hope these efforts may be successful. It is an enterprise connected with more and wider results then at first thought are likely to be supposed. The mildness of our climate, the purity of the air we breathe, the life and freshness of our water, the plentifulness of refreshing showers, the fulness of the out-gushing springs, the beauty of our scenery, the number and variety of the beautiful songsters of the woods, the facility of raising many of the tender plants, flowers and fruits, the perfection even of the apples, pears and peaches, which in addition to the pleasure we derive from a rational use of them, are becoming an article of so extensive a traffic, and a means of so much wealth, are all to a lesser or greater extent, connected with the success of this enterprise. From these sources a most abundant reward would be obtained for all the money and labor expended in carrying it out, were no returns to be expected from the growth of the trees themselves. If we value therefore the wealth or happiness of those who may come after us, or regard the estimation in which we shall be held by those, whose gratified feelings, and kind remembrance we wish to secure, we cantake no more wise and sure course, than to cover our hills, ornament our plains, and fill our valleys with a rich proportion, and pleasing varieties of the forest trees. Mixing those that put forth their freshness in the spring, with those which by their evergreen foliage, mantain in winter season, a pleasing contrast with the whiteness of the drifting snow. With such an inheritance handed down to them, our children's children made glad by the glory and beauty which they see around, will say that we their fathers, were a wise and understanding people.

# AN ESSAY

## ON THE CULTIVATION OF THE PEAR,

BY W. D. NORTHEND.

1847.

There is no tree in this Country more worthy of cultivation, or which better repays the labor and expense of rearing than the pear tree. The fruit is delicious, and in better demand in the market, than any other grown on our soil. The superior varieties of this fruit which have been introduced into the country within the past thirty years from Europe, and especially from Belgium, which Downing calls the Eden of the pear tree, have been widely distributed and extensively cultivated, so that their scions or stocks budded with them, may be obtained at very little expense.

The pear tree was not a native of this country, but was imported from Europe; yet there is, probably, no soil or climate in the world, excepting in Belgium, better suited for its growth, than is to be found in most sections of the United States. Downing, in his Horticulturalist mentions as an instance of the state of the market for pears, that a single grower and dealer sold in New York city in two years past, $2000 worth of this fruit at nearly $12 per barrel. But the climate and soil in this region is little if any less congenial to the growth of the pear tree than that of New York. The gardens in and about Boston, abound with all the varieties of this most excellent fruit which is cultivated with complete success, and in this county there is perhaps more attention at the present time paid to its cultivation, than in any county of its size in New England. The extensive and valuable nurseries of this fruit in the neighborhood of Salem, have been long and very favorably known among pear growers, and more recently, large nurseries have been planted in West Newbury, Topsfield and Hamilton, and very large numbers of young trees sold in every town in the county; and it is easy to anticipate that in a very few years this fruit will become more abundant, and our farmers reap rich harvests from their pear orchards. The cultivation of the pear tree, rightly understood, is extremely simple, and with a judicious selection of soil and location, and proper attention after the trees are transplanted from the nursery, they become as hardy, and bear as certain crops as the apple.

If any one expects to be successful in growing pears by merely turning up the sod, and forcing the roots of a young pear tree under it, and then leaving it to bring itself up, he will probably be disappointed in the results. It is universally acknowledged by fruit growers that trees need cultivation as much as root crops, and that it is as important to keep down grasses and weeds around their roots, as around the roots of the corn or potatoe. If any one expects good fruit, he must be willing to labor for it,—to select his soil with care, prepare it for the young tree, and cultivate the ground under the tree whilst growing. The Earth is a generous mother only to the industrious. The experience of fruit growers in this country has been ably and faithfully collated by Downing in his admirable work on "Fruits and fruit trees of America," and in the numbers of his Horticulturalist,* and very little additional information can be given, except in the application of his theories to the growth of the pear in this vicinity. Some of his suggestions may require slight modifications on account of the difference between the climate in Massachusetts, and New Jersey, or New York, yet very little that is new or original can be expected upon the subject.

*Stocks for the Pear.* The different stocks used for the cultivation of the pear, are the quince, white thorn, ash and pear, or free stock. The quince and free stock are most common, although on the ash the pear grows well, and is less liable to be injured by the frost in the spring as the sap rises later. The quince stock answers well for a very small garden, or when the cultivator wishes to obtain a great variety, and but few of a kind, as the tree is always a dwarf, but in large gardens the free stock is generally preferred. The quince is short lived, not usually bearing more than ten or twelve years, and is subject to attacks from the borer. Of free stocks, seedlings are much to be preferred to suckers. The latter are generally deficient in roots, are longer in getting started, are less healthy, and will when growing, throw up suckers from the roots.

Seeds from natural pears are more sure to vegetate, and produce hardier stocks than those from grafted fruit. It is important also, to select the seeds of large pears, as the stocks from them are more thrifty, than those from the seeds of small ones. A friend informs

* "The Horticulturalist and Journal of rural art and rural taste, edited by A. J. Downing. Published by Luther Tucker at Albany, N. Y., and by Joseph Breck & Co., Boston." It is a monthly periodical, well worthy encouragement.

me, that several years since, he planted a seed bed, one half with seeds of small, and the other half with seeds of large pears, the soil in each part of the bed being of equal richness, and that the result was, the first year the trees from seeds of large pears were thrifty and grew well, while those from seeds of small pears were puny and stinted, and that a decided difference in the growth of the trees could be distinctly seen during the whole time they were in the nursery.

The seed bed for pears should be in a rich soil, which should be trenched to the depth of fourteen to eighteen inches, and the subsoil well mixed with rich compost. The seed should be sown in the Autumn, in wide drills from two to three feet apart, to allow the passage of the cultivator between them. The next summer, the young trees should be thinned out, so that they shall not stand nearer than two to three inches to each other. The ensuing autumn, the trees should be covered with coarse stable manure, six inches deep, or with evergreen boughs. This covering should remain till the last of April or first of May. Young trees are not injured, as is sometimes supposed, by severe cold in winter, but by the frequent freezing and thawing of the ground, in an early spring. They are sometimes, when not protected, thrown entirely out of the ground in the spring, even when the tap roots are as long or longer than the tree itself, and when thrown out in this manner, the slightest frost is fatal to them. Hon. A. W. Dodge, of Hamilton, reared a nursery of young pear trees with great success, several years since, without protecting them in any manner the first winter. But I am inclined to believe that their preservation was to be attributed to the propitious season, rather than to their favorable location. A friend of mine some four years since planted a seed bed in a most favorable situation, and left the trees without any protection the first winter. The result was, that they were all thrown out of the ground and killed by the action of the frost in the spring. The reason that pear trees are thrown out by the frost more easily than any others is, that the first year they have no *lateral* roots to resist the action of the frost. They have but one straight tap root. The apple and other fruit trees throw out lateral roots the first year, which fasten the trees to the soil so that they cannot be thrown out by the frost. The second year the trees will need no protection, as by that time they throw out lateral roots. The second spring the trees should be transplanted from the

seed-bed and set out in rows, in the nursery. If the soil is good, they should be budded during the second and third years of their growth, and for this purpose the month of August is preferable.

*Soil and preparation of it for transplanting.* A good loam, on a dry and loose subsoil, is the best for the cultivation of the pear. Elevated spots are preferable, and in this climate a southern exposure is always to be chosen. Heavy, rich soils, with hard pan beneath, are unfavorable for the pear. A rich soil tends to force the wood of the tree into a very luxuriant growth at the expense of the fruit, and the wood made on such soils is frequently a late growth, unripe when attacked by the frost in Autumn, and liable to be killed by the frozen sap blight; and when covering a clayey subsoil, usually retains an undue amount of moisture, which is very injurious to the roots of the tree. Some recommend, on such lands, to dig a large hole into the subsoil, and fill it with properly prepared earth. But this is evidently injudicious, for a complete basin is by that means created, without any outlet, and all the evils of constant moisture and rich soil will follow. The wood of the tree will be forced, and the roots decay in consequence of such treatment. Pear roots need moisture, but it is injurious for the water to remain and stagnate about them. The subsoil should be of such character as to allow it to drain off readily. For this reason the slope of a hill is preferred for standard trees. The subsoil which is best for the pear is seldom covered with a loam strong enough even for the pear, consequently the land should be properly manured and cultivated before the trees are planted. The best manures for this purpose are muck, meadow-mud, or muscle-bed well pulverized; other manures well composted will answer where the above mentioned cannot be readily obtained. Where the soil is very light and dry, a top dressing of clay is very beneficial. The manure should be well rotted and incorporated into the soil before the pear trees are planted.

*Transplanting, and best time for doing it.* Having selected the spot for pear trees, and prepared the soil for their reception, the next process is the transplanting of the trees. This is usually done when the trees are from two to three years on the bud. Pears grafted on free stocks, should be set out in gardens from fifteen to twenty feet apart, and in orchards, from twenty to twenty-five feet, to allow sufficient room for the growth of the branches and nourishment for the roots. Pears grafted on the quince stock or thorn, may be set out

within eight or ten feet of each other. In planting the tree, a hole should first be made from twelve to twenty inches deep, depending upon the character of the subsoil, and of width sufficient to embrace all the roots without turning them in. The roots of the tree to be planted should be carefully examined, and all defective or bruised ones cut off smoothly, and the tap root, if long, should be severed. The tree should then be carefully inserted in the hole, and good fine loam carefully packed in around the roots, care being taken to press the earth under the roots so as to leave no vacuum The roots should be spread out horizontally, and great care taken to cover with very fine earth the little fibres from the roots which are essential to the nour ishment of the tree. The tree should not be shaken or pressed down after the dirt is filled in around it, as the effect is to injure and break off the fibres. No manure should be put into the hole with the roots, as in dry weather it heats and burns the roots so as to cause the tree to blight. Care also should be taken not to set the tree too deep, as it is oftentimes fatal. The depth of the nursery is generally sufficient. After the tree is set out, particularly if done in the autumn, the earth should be pressed down around it gently, and the tree surrounded, to a height of twelve or fifteen inches, with a conical mound of earth. The mound serves better than stakes to support the tree, and is also a protection against the frost. The earth should remain until the tree gets firmly rooted, when it may be levelled down. It is always injurious to leave the earth in the autumn so as to form a basin around the trunk of the tree for the water to collect in and freeze. Trees are very frequently winter killed by being so left.

There seems to be a diversity of opinion among pear growers, as to the best season of the year for transplanting pear trees. Some prefer the autumn, while many prefer the spring. Downing prefers the autumn for light and loose soils, and the spring for heavier land. His view is, that trees set out in the fall get rooted before winter, and are some weeks more forward in the spring. These views are more suited to the climate of New York and New Jersey, than of Massachusetts. For I apprehend the experience of pear growers in this region will show that the tree when set out in the fall does not put out any new roots before the winter sets in. Manning in his work on trees, says, "The impression that fibres will form in the autumn from newly set trees, is common, but I have never witnessed it." Cold weather sets in in this State so soon after the leaves fall

that there is no time for the trees to get started. Another objection to fall planting is that the trees not taking root are more liable to get disturbed in their places by the storms and high winds than when set out in the Spring. If transplanted in autumn it should be done as soon as the trees shed their leaves freely.

*Treatment after transplanting.* A pear tree needs cultivation after it is set out. The ground should be kept open and mellow, and until the tree has been set out six to eight years at the least, the ground should not be laid down to grass, and then not more than one or two years at a time. The best way to enrich the soil about the roots of the tree, is to cover the surface of the ground around the trunk with manure in the autumn, which will serve as a protection against the frost in the winter, and the liquid which leaches from it into the ground will afford proper nourishment for the roots, and in the spring to spade the manure into the ground. This should be done every year. It is better to do it regularly, than to give it an occasional heavy manuring. If the tree should be too luxuriant, it is well to lay bare the roots two or three weeks in the fall, and with a sharp instrument to cut off the tap root. Air-slacked lime or ashes applied to the soil promotes the growth of fruit spurs and buds. The pear tree needs but very little pruning except when the branches become diseased.

*Diseases of Pear Trees.*—The principle diseases to which pear trees are subject are *insect blight* and *the frozen sap blight.* The *insect blight* shows itself in June and July. The end of the branch suddenly turns brown and in a few days black and hard. The insect which causes this is called the *scolytus pyri.* It is a species of beetle not more than one tenth of an inch in length. It deposits its eggs in July and August in or near the bud. The ensuing season the insect perforates toward the centre of the branch and causes the blight. The remedy for this is to cut off and burn the branch some inches below the blighted portion. The symptoms of the *frozen sap blight* are, the appearance of a thick clammy sap upon incision of the bark of the tree in spring or autumn, and the appearance in spring and early summer of shrivelled and black portions of bark on the branches. The disease is caused by the winter setting in before the wood of the pear tree is ripe. The vessels being full are frozen and thawed with the change of the temperature and the vitality of the sap is lost and instead of performing its usual functions in promoting

the growth of the tree, becomes transformed into a slow poison. When the sap rises in the spring the poisoned sap becomes mixed with it and is carried to the various branches of the tree and causes the effects described. The remedy for it is to cut off the affected branches as soon as the blight appears. Downing recommends whitewashing the trunk and branches of the tree in the fall as a preventive against this disease. Whitewash reflects the rays of the sun and prevents the rapid thawing of the bark which causes the blight. There is however but little to be apprehended with us from the frozen sap blight except to trees planted in rich and damp soils and it is only to trees planted in such positions that the preventive will bo useful. In light soils the wood ripens sufficiently early to be out of the way of the frost. In addition to the diseases named, the leaves of the pear tree are subject in July and August to attacks of the slug worm. These may be easily destroyed by applying a mixture of whale oil soap and water to the leaves, or by throwing wood ashes on them in damp weather. Ives in his excellent work on fruit trees makes mention of an insect which he calls coccus, which attaches itself to, and sometimes covers the bark, for which he recommends a strong solution of whale oil soap and water, applied with a stiff brush.

*Gathering the Fruit.*—Summer and Fall pears should with very few exceptions be gathered before they are fully ripe, and allowed to mature in the house. Some extensive growers have apartments fitted up with shelves expressly for this purpose. Most superior varieties if permitted to ripen on the trees, become dry and insipid. Another advantage of gathering them before maturity is that they ripen gradually and are a longer time in eating. The fruit and trees are also prevented from injury from storms and high winds by this method. Winter pears should be allowed to remain on the tree as long as possible without danger of injury from the frost, and when gathered should be carefully packed and kept in a dry place.

*Varieties of the Pear.* The varieties of the pear are almost endless. New kinds are obtained by crossing, and in the garden of the Horticultural society at London, more than seven hundred kinds have been proved. Most of these originated in Belgium, although some of the finest, such as the Seckle, the Dix, Buffum's, Dearborn's seedling and Andrew's pears, originated in this country. Many of the Belgian pears which have been cultivated with great success in that

country, have not been fully tested with us. The soil and climate have considerable effect upon the quality of the pear. Varieties which in one soil and climate are superior, in another are secondary. And of the pears which have been fully tested, it is impossible to select a limited number which may be recommended as decidedly superior, as the tastes of different individuals differ very much in regard to this fruit. In conversation with a nursery-man in Salem some weeks since, upon the comparative excellence of the different varieties, he stated that of the many varieties in his nursery, he considered the Bartlett the most inferior. Many others entertain the same opinion of this most popular and excellent fruit. This difference of opinion is shown in the replies made by different nurserymen to the enquiries which have been made at different times through the Horticultural papers as to the best varieties for a small garden. There are very few who agree upon a selection. The best way for a person to decide upon a selection is to try for himself the different varieties and select according to his taste.

We can only hope, in conclusion that the farmers and gardeners of Essex county will turn their attention more to the cultivation of the pear. By a very little labor any one who has a small spot of ground can supply himself with an abundance of this most delicious fruit, and there is no crop that can be raised which will be a better or surer source of income to the cultivator.

# AN ESSAY

## ON THE CULTIVATION OF THE CRANBERRY,

BY DAVID CHOATE.

Although Cranberries have grown upon the wild vines in Barnstable County so long, that, in the language of the law, the memory of man runneth not to the contrary, the *cultivation* of this delicious fruit opens a *new field* of enterprise to the Agriculturist. The names, it is true, of a few individuals in Dennis and Yarmouth, who are said to have paid attention to the subject some twenty years ago, are given in the Agricultural papers; but probably the number was small indeed. The early volumes of the New England Farmer, even when conducted by the far reaching Fessenden, appear to be silent upon the subject. The word Cranberry, whether relating to the cultivated or wild kind, does not occur in Varlo's Husbandry, published in 1785, nor in Deane's New England Farmer, in 1795; neither is it to be found in Nicholson's Farmer's Assistant, a valuable work published as late as 1820. Other acids were substituted for the table, and cranberries have not unfrequently been a drug in the market at a dollar or even fifty cents a bushel. Indeed, of so little consequence is the culture of this fruit, considered ever since, that town Assessors, in reporting full statements of fruits and other esculent vegetables, agreeably to an order of the Legislature, though they can sometimes find room for even the diminutive and short "whortleberry," and are known actually to have returned "ten pounds of hops," as indication of the industry of the town, find no room for Cranberries; and it does not appear from the returns that more than 125 bushels have been grown in the entire Commonwealth. And this withholding of information on the part of those who are able to furnish it, presents not a greater obstacle in furnishing out a chapter on the subject, than the singular *conflict* of opinions among those who do speak and write. Let any one sit down to the purpose of preparing himself to cultivate cranberries, especially upon high land, shaping his plans according to the newspaper articles upon the subject, as they have appeared for a few years past, and he will probably find the whole subject appearing much as Dr. Johnson found the English language, when he took his first survey of it, "copious without order, and energetic without rules." Choice

is to be made out of "boundless variety," and errors are to be detected without any settled test. If any action of our County Society shall prove effectual in eliciting information, positive, definite, reliable information in relation to it, it will render an essential service.

That it would be for the interest of our farmers, who have low or meadow land capable of being flowed occasionally with water, to cultivate cranberries cannot admit of a doubt; because in such situations, even under an administration of "slovenly neglect," they often yield in abundance. It may be, indeed, that the demand at present, is not urgent. It may be that they are sometimes hawked about the country at one dollar a bushel. And what if it sometimes is so? An *increase of the supply will increase the demand*, even at an augmentation of the price. Hitherto, apples have filled a large share of the department which rightfully belongs to the cranberry, because in the country, every family has, or may easily have an orchard or at least a tree; while few, even now, for a moment entertain the idea that the delicious fruit of which we are speaking, can be grown upon any land fit for an orchard, in far less time than an apple tree possibly can, with the great advantage of being subject to no borer, canker worm or catterpillar. For these reasons it is, that cranberries are not usually found upon the list of family articles which *must be had:* and accordingly they may have often been offered, without finding sale.

*Is the Cranberry capable of being transferred from low, wet land, to that which is high and dry?*

*And would it be a profitable crop upon high land?*

These are questions which it is proposed to consider at some length. And as regards the first inquiry, before noticing experiments recently made, and which may succeed or may finally fail, it may be well to ascertain what opinions have been entertained among the learned on subjects analagous to this. Have any theories ever been advanced among scientific men, irrespective of this question, which would *make it probable* that any vegetable could be subjected to a transition so violent as that from wet to dry, and not only survive it, but triumph over it? This is material, because many minds, believing it subversive of nature's laws, calmly conclude that the few cases of supposed success are accidental, out of course, and upon the regular recurrence of which no one could calculate with the slightest safety.

[Here the manuscript contains quotations at considerable length from various authorities, to prove, which they do successfully, that many trees and other plants which naturally grow only in wet and peaty soils, have been successfully cultivated on high and even dry grounds, and both the quality and productiveness thereby improved, and the inference legitimately drawn therefrom is, that there is nothing impossible—nay nothing improbable in the supposed fact, previous to any experiments, that the cranberry may be removed to upland soils and there grow luxuriantly, bearing more abundantly fruit of more excellent quality.]

These quotations are from Turner's Letters on Sacred History, pages 91, 95 and 157; J. Smith's Introduction to Botany, page 95th; Dr. Walker; the London Encyclopædia, article on Gardening; Dr. Underhill, Patent Office Reports, 1845, page 431; which on account of their length, and the unusual quantity of matter for the pamphlet, are by the consent of the author omitted.

The Albany Cultivator, vol. 9, page 93, informs us, on the authority of Loudon, that Sir Joseph Banks, who obtained the cranberry from America, raised on a square of eighteen feet, three and a half bushels, equal to 460 bushels to the acre; and the Boston Cultivator informs us, that it was in the *garden* of Sir Joseph that the berries grew. Nothing is said of the use of water. The inference is as fair that it was not used as that it was.

Mr. Cole, of the Boston Cultivator, April 5, 1845, remarks as follows: "We have seen cranberries flourish well on land that was sufficiently dry to produce good potatoes; the soil a black loam."

In the Cultivator of Sept. 13, 1845, Mr. Cole observes: "As we have had so many inquiries on the cultivation of the cranberry, and as they usually grow in wet ground, we lately noticed particularly a spot that was remarkable for an abundance of excellent fruit, by the side of a piece of water, which was on good tillage land. On examining the soil, we found that it was a dark sandy loam, and we are informed that beneath a few inches of the dark loam, was a white sand."

The Patent Office Report, for 1845, pp. 430 and 431, contains a discussion in the New York Farmer's Club, during which Gen. Chandler presented cranberry plants "with their great crop of fruit, &c.," raised by Mr. Sullivan Bates, of Bellingham, Mass. He stated that "it was produced by his new method, *transplanting*

*from low grounds to high.* "His success," said Gen. C., "was complete ; *he gathered from one acre about four hundred bushels of cranberries in one season.*" The Chairman spoke of an experiment of his own. He said he "took from swamps on Gen. Johnson's place, some cranberry plants, and planted them on ground *eighty or a hundred feet above the swamp ; they thrived, and the fruit was so close together, that one could hardly put the finger in, with out touching the cranberries.*" He afterwards remarked that the soil was loamy and that he "watered them well." It does not appear whether he tried any without watering, but boasts of "not losing ten out of the one hundred and fifty plants." It will be interesting to know the fact, that in the experiment made by Capt. Low, of Essex, although he set out near thirteen hundred plants, (on soils,) yet without any artificial watering, he lost not one.

Thus much for the published accounts that have come to hand. An intelligent gentleman from South Hadley, Mr. Ripley, states orally, that for ten years (the time of his residence in that town) he has been familiar with a spot of cranberries, growing upon a dry, hungry knoll of sandy loam, bearing plentifully every other year, and some every year. He remarked that when the soil had been a little broken, the runners were more vigorous and in better bearing than when the sward was firm. Mr. R. also states that Mr. Robert Brainard, of the same town, transplanted cranberry sods from the meadow into his tillage land in June last, (1847) and they have already produced the full grown cranberry. He is so gratified and surprised at this result, that he intends to enlarge his lot without delay. As evidence of the nature of the soil, Mr. Ripley states that Indian corn was growing in the same field, and potatoes directly along side."

Abel Burnham, of Essex, exhibited at the cattle show in Lynn, in September last, a handsome specimen of cranberries, raised upon sixty-four rods of high land,—land which is well known to have been formerly cultivated with Indian corn. As evidence of the hardy and almost indestructible nature of this plant, it is said by persons upon whom the utmost reliance may be placed, that in one case at least, the cranberry vine appears to grow in a bed of the purest gravel.

The last case of which it is proposed to speak, though others are by no means wanting, is that of the experiment of Capt. Winthrop

Low, of Essex, a report of which, accompanied by his statement, will be found in another part of the Transactions for this year. The sods were taken dripping from the meadow in the month of May, of the present year, and within a day or two were set in a soil of sandy loam, a part of yellow appearance, and a smaller part being dark. Capt. L. used no water at all about the plants, and though the quantity of rain in May was small, (two and seven-eighths inches only,) yet every vine lived, and as appears from the report and statement, nearly every hill produced berries. The amount of rain during the six months beginning with May, has indeed been greater than usual, viz: twenty-five and three-eighths inches; in 1846, for the same months it being but fifteen and seven-eighths inches; in 1845, twenty-two and seven-eighths; in 1844, twenty-one and three-quarters; and in 1843, nineteen and three-quarters inches. But the soil is not retentive of moisture, and the two or three extra inches of rain the present year could have made but little difference on that account. The ground always appears dry in a few hours after a shower, a fact accounted for partly by the porosity of the soil, and partly by the surface itself, which is descending, at the rate of six and one half feet in eight rods. Water could not long stand upon any part of that land, and the whole experiment is a grand triumph over supposed impossibilities. It is true the vines have not yet had a trial of even a single year. But if the difficult stage of taking root is passed; if the plant has sought and found its proper aliment, if in short it has in its new and strange situation already taken root downward and borne fruit upward, what other greater difficulty can there be? It is believed there is none.

It is not to be forgotten that the foregoing facts are in singular contrast with nearly all that has been written and published upon the subject of cranberry culture. The Yarmouth Register seems to lead off, and coming from Barnstable county, where the Halls, the Hallets and the Thatchers have so long been sowing and reaping, its authority seems to be unquestioned. What mode does the "Register" recommend? As quoted in the Pat. Off. Rep. before referred to, this authority says, "the cranberry will live and grow in comparatively dry soils, but *will not bear fruit unless its roots are immersed in water all the year.*" Again, "*there must be an abundant supply of water all the year*:" again, "the ground must be saturated with water;" and again, "in a selection of a situation for his cranberry

yard, the cultivator must observe first, whether the soil is of a loose, porous character, easily permeable to water; and second whether there will be an abundant supply of water in the driest season." If this is the true mode of cranberry culture, then probably it has seen its glory. But what have been the results under the water system, and what upon the opposite one?

The New England Farmer for 1832, page 348 informs us that Mr. Hall of Barnstable who "has been engaged for twenty years in the cultivation of the cranberry, had averaged seventy bushels per acre for ten years, and some seasons had had one hundred bushels." There the roots were undoubtedly kept "saturated with water," because to give "an abundant supply of water" is the universal practice in that county; and yet the maximium quantity is "one hundred bushels per acre;" while Sir Joseph Banks, in his garden, of course without extra water, produced 460 bushels to the acre; and the chairman of the New York Farmer's club gave it as his opinion, after his experiment upon land "eighty to one hundred feet above the swamp," that five hundred dollars might be obtained for a full crop of an acre;" Mr. Bates of Bellingham having gathered "four hundred bushels from an acre in a season, the plants had been transplanted from low grounds to high." *

So far then as the experiments have proceeded it is a most gratifying fact that the cheapest mode of cultivation proves to be the most productive. If the Barnstable theory is wrong therefore, it is high time the public mind were disabused. That this fruit will bear so great, so violent a change of situations without damage, nay with absolute improvement, is remarkable, is astonishing truly; but if it be true that it will, then surely we ought to know it and have the benefit of it.

There is one other item in the Barnstable mode of culture which requires attention. It is the use of sand. The Yarmouth Register is as full and positive in relation to this as it was respecting wa-

* James N. Lovell gives the Barnstable County Agricultural Society a statement of his mode of cultivating cranberries. He says, that in 1844 he set out cranberries on what had been a cedar swamp, covered over with beach sand. They have done well, and the average yield the past season, was a bushel and a half to the square rod, or 240 to the acre. He kept the land flooded with water till the 15th of April, each year. He speaks of a worm that has sometimes attacked the vines, and to destroy which, he recommends sowing on them salt or ashes about the middle of July, while wet with dew, at the rate of a bushel to 40 rods.

ter, and insists that there must be "from four to six inches of sand,"—"cover the surface with beach sand"—"if not, with any sand that does not contain loam, or surface soil." It is possible that the vines grow in spite of it, rather than in consequence of it. Sir Joseph Banks says nothing of it; the New York club never heard of it, judging from the reported cases. Mr. Cole was once told that in a certain case there was some, but that it was under the loam or surface soil, a thing to be excluded at Barnstable altogether. There was none near the vines at South Hadley, as Mr. Ripley declared, that town being some sixty miles from the sea. Capt. Low in his lot used sand on a part of it, having been led to it, by the public prints, but there is no perceptible difference in the appearance of the vines where it was used and where not. The inference is therefore irresistible, that sand is not indispensable certainly, and probably not necessary at all.

But it is time to consider the second inquiry, viz: whether it would be profitable to cultivate cranberries upon high land, and it cannot take much time to answer it. If the minimium quantity with Mr. Hall was seventy bushels per acre, and Mr. Bates has easily procured four hundred bushels, and if according to Mr. Coles, two hundred bushels is a medium crop, what other vegetable at even one dollar a bushel begins to compare with it for profit? For it must be recollected that no manure is necessary from beginning to end, and after the vines once cover the ground (and this appears to be in from three to five years,) no farther labor is necessary other than that of gathering the berries, and that at an expense of about twenty cents per bushel. All cultivators however lay it down as important that the cattle should be kept off, and not allowed to trample upon them. Here there will necessarily be a loss of fall feed, necessary to be taken into the account in making up the bill of profit and loss.

It may be properly stated too on the authority of Mr. Worth, a member of the New York club, that "the cranberry of Russia is larger than that of England, but both of them are scarcely half the size of those raised by Mr. Bates, procured by transplanting from low grounds to high, and of much inferior flavor." If Mr. Worth is accurate in this statement, and there is no known reason for doubting it, it is not extravagant to suppose that even foreign markets may open for the American Cranberry. Might it not have been a

belief in the superiority of the American to that of the English, that led Sir Joseph Banks to procure the former for his garden culture?

But without anticipating any conjectured market abroad, there is no reason to believe that the home demand can be at present fully met. Let the public but once know that a supply of this delicious berry can be always and easily had, aye and be as easily cultivated as the apple itself, if not more so, and the demand would soon outrun the supply. Most families are compelled to rely for half the year upon apples for sauce and pies, and the pickled cucumber, indigestible and dangerous as it is, and often thrown away as it always ought to be, is retained upon the farmers' table, merely because it is the only thing of the kind known that can be kept through the year; while the voluptuary adds "Spanish Olives," "Walnut Ketchup" and what not, more indigestible and dangerous still. What an opportunity to bring forward and substantiate the pure acid of the cranberry! For culinary purposes it must be cheaper. Apples are held to be unfit for pie or sauce till every element of the natural flavor almost is destroyed or neutralized by the rose water and the spice. But give to cranberries the *quantum sufficit* of *one single thing*, "sweet cane," and they never tire. The amount of acid in a single bushel is not to be overlooked, and the augmented amount especially, when diluted for the taste. When these and other familiar facts are considered, the value and advantage of the fruit in question begins to be felt and known.

Let as many then as will, go forth, "weeping," if they must, but go forth bearing seed, and I can but think that in due season they will return bringing their sheaves with them. The number of those who will continue to doubt whether the vines will "outlive the first year or two," or who will wait to know whether they will survive the winter without having "their roots saturated in water," will always be so large, that the enterprising will find an open field and fair play.

Our country consumes eighteen thousand dollars worth of foreign fruit a year; and of the single spice called pepper, we use a good three million dollars worth a year. With such facts as these before us, can any one for a moment fear an over-supply of the fruit, the cultivation of which it has been the object of this essay to recommend.

# AN ESSAY

## ON THE CULTIVATION OF THE APPLE,

BY JOHN M. IVES.

1847.

The apple is undoubtedly the most valuable fruit of temperate climates, and in no part of the world does it succeed better than in our own New England. There are not to be found finer varieties than have been produced in Massachusetts. Such are the "Baldwin," "Hubbardston Nonsuch," "Minister," "Porter," "Lyscom," "Williams' Favorite," "Roxbury Russet," "Ben of Reading," and the "Mother."

This fruit is unquestionably the most profitable, as well as easiest of culture for the farmer. The earliness of some varieties, and the long keeping properties of others, render the apple one of the choicest gifts of nature. One of the first and most successful cultivators of this fruit in our country, was William Coxe, of Burlington, in New Jersey, who had in his orchard some thirty years since upward of one hundred sorts; many of these trees are now in a thrifty state, particularly those that were *engrafted upon suckers.* We have for some time been convinced *that suckers make good stocks;* and the above in relation to Coxe's Orchards of the Apple, (as we were informed during a recent visit to Burlington,) seems to corroborate this. The roots of suckers are more inclined to take a horizontal direction than seedlings, which are apt to extend downwards into a cold sub-soil. Leibig's, the great Agricultural chemist, leading principle is, that the carbon of plants is chiefly derived from the atmosphere; which suggests the importance of admitting air to the roots of plants, by inviting them to the surface. The supply of suckers, however, is so limited, as at least one half of those taken from around trees, have not sufficient roots, and many of them crooked stems, we must propagate from seed; usually obtained from the pomace of the cider mill.

*Sowing seed.* The seed must be sown in autumn, in drills in well pulverized soil; keeping the surface loose and free from weeds. In the spring of the second season, as early as the weather will admit, we select the largest of one year's growth, take them up, shorten their tap-roots, and then plant them out in nursery rows, one foot

apart, and three feet between the rows. The following autumn, we generally bud all these within three inches of the ground. This is usually done in September, and generally succeeds best when performed in cloudy weather, or in the morning or evening; for the great power of the mid-day sun is apt to dry and shrink the cuttings and buds.

*Budding.* In selecting buds they should be taken from well ripened shoots, and *not* from immature ones that frequently start from, and near the centre of the tree. Cut off the unripe buds upon the extreme end of the shoot, leaving only those that are smooth and well developed; and also the leaves, leaving about *one half of the leaf stem*, for the convenience of inserting the buds. Then take strands of bass, or Russia matting, soaked in water to render it pliable; make an upright incision with a sharp knife in the bark, of one and a half inches long, and at the top of this, a cross cut which will form a T; take off a bud from your scion with a portion of the wood attached, raise the bark upon your tree with a smooth piece of bone, ivory or hard wood, inserting the bud, and then tie the strip of matting firmly across the top and bottom of the bud. In about three weeks after these are budded you will see whether they are taken by their plumpness. If they are shrivelled, you can then ordinarily re-bud, as the bark in young and thrifty seedlings will usually peel through the month of September and often into October. If the buds are well united and the tree has swelled or the ligature seems to be cutting the stock, it must be removed. When the budding has been performed late, we occasionally let the bandage remain until the following spring.

*Cutting the Stock.* In the ensuing spring as soon as the buds commence swelling, we head down the stock with a sloping cut within two inches of the bud; if the tree makes a strong growth during the early part of the season we then on the last of July or first of August cut off the remaining wood close to the budded shoot. We in common with nearly all cultivators bud all nursery trees in preference, considering it better in every respect, producing a much stronger growth.

In budding, great care should be taken in raising the bark for the insertion of the bud, that the *cambrium* be not injured, this *cambrium* is a secretion between the wood and bark.

*Side shoots not to be removed.* With young trees it has been the

practice of some, to trim off the laterals or side shoots, which causes the trees to make a slender and weeping top; these shoots should not be taken off while the trees are young and thrifty; the trunk will not grow so fast in circumference by divesting them of their leaves or side branches.

*Preparation of Land.* In the preparation of land for raising seedling fruit trees, we have found that by following nature in her mode of enriching soil by the use of vegetable substances, such as muck, peat-earth, leaf-mould and ashes, to be the best dressing for the growth of fruit trees. These we should recommend to be composted with barn-yard manure; hog manure *unless* well decomposed, we consider as deleterious to fruit trees; air-slacked lime on the generality of our soils is beneficial, particularly for the pear tree. Old pasture land is better for fruit trees, than that which has been long under the plough, merely because it is less exhausted, and consequently contains more of that decomposed vegetable matter which is so peculiarly fitted to be the food of trees.

*Planting out.* Apple trees from the nursery are planted out at two and three years from the bud. In setting these whether seedling or sucker stock, they should not be placed deeper in the ground than they originally stood in the nursery; or if the soil is a deep and moist loam one inch higher; for we believe that deep planting of the apple tree is a serious evil, and many of the disappointments of the fruit grower, may be traced to this cause; it is better to draw up the earth around the tree in the form of a small hillock, than to place them too deep. In shallow planting, the roots will have a horizontal direction given to them, which they will afterwards retain.

*Season for Planting.* Respecting the best season for transplanting the apple tree, we have as is most generally practiced in our vicinity, set them in the spring; but we find no objection to autumn planting, provided the soil is dry; the fall rains settles the earth closer to the roots; but when the soil is clayey and the weather damp or wet at planting time, it gets into a state of puddle and rots the roots in winter, and unless the weather is dry in autumn, it had better be deferred until the early spring.

*Watering newly set Trees.* The practice of watering newly set trees after they are planted, by pouring buckets of water around them is a bad practice, for besides settling away the soil from the roots, it often by being thus poured upon the surface runs into a paste,

which hardens by the sun into a cake, obstructing the free entrance of the atmosphere into the soil, without which no plant will thrive. Mulching, (so called,) which is done by placing coarse manure or litter around a tree, will preserve the moisture, and is a much better practice than surface waterings.

*Soil &c., for an Orchard.* The soil best adapted for an apple orchard, as well as the situation and aspect for the trees is not so easy to determine, as we cannot set down rules that will not meet with exceptions; but of this we feel confident, that deep rich soils in sheltered situations are not as some suppose the most proper for the apple; for we find that this tree succeeds well in shallow loam, the young wood is always of more moderate growth, and better ripened, than when their roots strike deep into the ground.

*Position of an Orchard.* The situation of an orchard should neither be in the bottom of a narrow valley, nor on the top of an exposed hill; in the first, the bearing wood is rarely so well ripened, and in the second, they are too much exposed to winds; the most desirable site, is the side of a hill which slopes to the South or South west. In planting out an orchard of standard apple trees they should be placed in rows ranging from North to South, or as near to these points as may be; the distance of the rows apart should be forty feet, and the spaces from tree to tree, in the rows, should not be less than from twenty to twenty-five feet. The holes, for the reception of the trees ought to be circles or squares, of not less than six feet over; the trees should not be permitted to be grass bound, but the grass or sod dug out as far as the extent of their branches during their whole growth. It is not well to raise a crop of tap-rooted vegetables in an orchard; the onion is probably the least injurious in a young or newly set orchard; white beans we find the least exhausting to raise between our nursery rows of young fruit trees.

*Pruning.* In pruning the apple tree we have found the spring the most favorable, soon after the swelling of the buds, the sap then being in motion, the wounds soon heal over; if this is done in the fall or winter months, the trees are apt to crack or canker. Every limb taken off should be cut close to the main stem, and provided the limb is large, a composition of tar and red ochre, or burgundy pitch and beeswax well incorporated, be spread upon the end to keep out air and moisture. The great principle to be attended to in pruning apple trees, is to cut out all dead, diseased, or useless branch-

es at their base, and thinning others, so that the sun and air may penetrate *to* (*not through*) every part of the tree. Few people have confidence enough to do this effectually; but they may be assured that they would have more and better fruit, were they to retain only one half the number of branches which in general at present exist in most orchards.

*Injurious Insects, Aphides.* The insects which injure our fruit trees are various, as well as the methods devised for their extirpation. The genus of Aphis or green fly which is often found upon the succulent shoots of young apple trees, and which injures their growth; we think that the best preventative operation is that of good culture. Autumn ploughing also, exposing the larvæ to the frosts of winter, and the moderate use of salt is destructive to this insect. *Curculio.* The most pernicious enemy however to the apple is the curculio, which in a chrysalis state passes the winter in the earth; from thence emerging at about the time the blossoms appear, and depositing its egg in the apple, these eggs produce small maggots which exist in the fruit, causing it to drop prematurely. The best method we are acquainted with to destroy or lessen its ravages, is to give the ground a top-dressing of coarse salt *early* in April around each tree to the spread or extent of its branches, and also to gather up the fruit that drops *daily;* by this course, a check is put to there ravages.

*Canker Worm.* The canker worm is another troublesome insect to our apple trees, they are not however so common here of late years as formerly, they appear some seasons in abundance, and then years will elapse before we are again troubled with them; various methods have been adopted for their destruction, some apply strips of cloth bound around the body of the tree, smeared over with tar to prevent the ascent of the female or grub, but as they move up in the fall, and even in warm days in the winter, as well as in the spring, this is an uncertain as well as a tedious process; this insect enters the ground near the trunk or body of the tree, rarely if ever beyond the spread of the branches; by applying lime, ashes and salt, dug in around the trees in September and October tends greatly to lessen their ravages.

*Caterpillar.* The caterpillar is another enemy to our apple orchards, weaving their nests in the forks of the branches; if suffered to remain, they grow and multiply greatly, injuring the trees by destroying the leaves which are so essential to their health and growth; various modes have been adopted for their destruction. Mr. Pell's

practice is to "touch their nests with a sponge attached to the end of a pole, and dipped in strong spirits of ammonia; the sponge is turned slowly round in the nests, and every insect coming in contact will be instantly killed." They may be destroyed by the well known circular brush, invented by the late Col. Pickering. We have found the most effectual way of destroying this pest upon small trees, if begun in time, is to strip them off with the hand, and crush them under the foot; as they do not leave their nests until late in the morning and return again about four or five in the afternoon, we embrace the opportunity of visiting them *at home*.

*The Apple Borer.* The apple and quince tree borer is another insect, which is net, however, so common as the caterpillar or canker worm; it is a large, fleshy grub, which enters the tree near the ground where the bark is tender, girdling the stem; we have never seen but one instance of the insect on our premises; this was upon a quince tree, which was destroyed by thrusting a flexible wire into the hole. A mound of ashes or lime around the trees, is said by Downing to prevent the attack of the apple borer.

*Coccus or Bark Louse.* The apple tree, when young, is apt to be infested with an insect called the Bark louse or coccus, which are so near the color of the bark, and adhere so closely, as to be almost imperceptible; these are easily destroyed by a strong mixture of soft soap and hot water applied with a brush to the bark.

*Ashes.* These various insects are kept down greatly by the use of ashes as a top-dressing of the soil; it is also one of the best manures for trees. Mr. Bridgman says that in England "a good farmer would dispense with his barn rather than be destitute of an ash house; I have known (says he) farmers to supply the cottagers with as much peat as they could burn, on condition of their saving them the ashes, and there are others that will keep men under pay throughout the year, burning peat, for the same purpose."

*Keeping Apples.* As regards the best method of keeping winter apples, opinions are various. In Europe, they usually spread their fruit after gathering it, on a floor to sweat, previous to their final packing, which is then placed in sand, sawdust, chaff, charcoal dust or peat earth. In this country, we find the practice of our most experienced growers is to gather the fruit by hand, and immediately place them in tight flour barrels, shaking them gently while packing, and then head them up tight; they are then placed in a cool, shady

exposure, under a shed exposed to the air, there to remain until it becomes cold, freezing weather, when they are transferred to a cool and dry cellar, placing the barrels *on their sides*, and keeping the cellar dark.

As a source of income, we believe that the apple can now be relied upon either for our own markets, or for exportation; the facilities of communication by steamboats and railroads, opening new markets for this wholesome fruit, while the prices obtained for the finest sorts have not diminished, but advanced, should incite our farmers to plant out orchards of the apple. Mr. Pell, of Esopus, on the Hudson river, who has an orchard of two thousand, bearing Newtown Pippen Apples, gathered from the trees in one season, seventeen hundred barrels of fruit, part of which were sold in New York for four, and others in London for nine dollars per barrel.

In making a selection of Apples we should as far as is practicable, endeavor to fix upon those which are found to suit our soil; we have heretofore remarked that many kinds which are good bearers when grown in strong and moist soils, for example the Pickman Pippen, Williams' Favorite, Blue Permaine, Roxbury Russet and Ribstone Pippen, are the reverse of this upon our own soil which is of a light sandy loam; while the Baldwin, Hubbardston Nonsuch, Yellow Bellflower, Danvers Winter Sweet, Minister and Fall Harvey grow and bear well upon our grounds. The Baldwin and Hubdardston Nonsuch seem to be at home in almost every variety of soils.

In a Report which was made to this society some years since, we remarked that Apples originating on any given soil, will be generally better than most of those which are introduced into it; citing the Newtown Pippen, and Pennock's Red Winter, which are first rate at the south where they originated, but when fruited in this locality, are found inferior to the Hubbardston Nonsuch, Baldwin and some others. A close observer at the West (Rev. Mr. Beecher) has recently observed "that the soil and climate so modify the flavor and other qualities of the apple, that there is reason for believing that an apple originating on any given soil will be better than many which are introduced into it, for though the apple is raised in almost every soil, yet it is probable that each variety affects a particular one, thus I perceive the most popular apple of New England are natives; this to a considerable extent is true of the West."

Among the best varieties of Apples in Massachusetts are the

"Minister," and the "Mother," they are of recent origin, the first named was raised in Rowley, and is a winter fruit, combining great beauty, productiveness, large size, fine flavor, and late keeing properties. The other is a late fall apple of highest order; it originated in Bolton, and is a large oblong red fruit of excellent flavor and a good bearer. No better evidence can be given of the congeniality of the soil of our state for the Apple, than the natural production of such fruit as the Baldwin, Minister, Hubbardston Nonsuch, Mother, Roxbury Russet, Danvers Winter Sweet, Aunt Hannah, and the Ben of Reading.

*Dr.* *William Sutton, Treasurer, in account with the Essex Agricultural Society.* *Cr.*

| | | | | | | |
|---|---|---|---|---|---|---|
| 1846. | | | | 1846. | | |
| Sept, 29. | To balance of old account, | | $418 42 | Nov. 18. | By amount of Premiums and Gratuities awarded by Trustees, | $381 00 |
| Oct. | To Bank Dividends, | | 134 00 | 1847. | | |
| Dec. 3. | To State Bounty, | | 600 00 | Jan. 23. | By Loan, on security of stock, | 500 00 |
| 1847. | | | | | By Expenses, as follows: | |
| April | To Bank Dividends, | | 206 50 | | Exhibition, in 1846, | 90 04 |
| | Amount received of new members, | | 13 00 | | Secretary's Salary, | 50 00 |
| | Premiums unclaimed, | | 21 25 | | Printing and Binding, | 113 75 |
| | Lumber sold, | | 3 40 | | Postages, | 5 45 |
| | | | $1451 57 | | | 264 24 |
| | | | | | By Cash on hand, | 306 33 |
| | | | | | | $1451 57 |

## FUNDS BELONGING TO THE SOCIETY.

| | | | | | | |
|---|---|---|---|---|---|---|
| 16 | Shares in | Warren Bank, cost | 1596 00 | 12 | shares in | Lynn Mechanics Bank, cost | $660 00 |
| 12 | do | Exchange " par | 800 00 | | | Notes Receivable | 1427 36 |
| 21 | do | Commercial " cost | 1411 66 | | | Cash on hand as above, | 306 33 |
| 7 | do | Mercantile " par | 700 00 | | | | |
| 6 | do | Merchants " par | 300 00 | | | Funds on hand now, | $3572 60 |
| 5 | do | Village " par | 500 00 | | | Funds on hand, 1846, | 3184 69 |
| 3 | do | Salem, " par | 300 00 | | | | |
| 6 | do | Danvers, " cost | 571 25 | | | Increase of Funds, | $387 91 |

SALEM, Sept 27, 1847. (E. E.) WILLIAM SUTTON, Treasurer.

SALEM, Dec. 20, 1847. The undersigned have examined the foregoing account, and find the same correctly cast and well vouched.

ASAHEL HUNTINGTON, JOHN I. BAKER. } Auditors.

# OFFICERS OF THE SOCIETY.

CHOSEN SEPTEMBER, 29 1847.

JOHN W. PROCTOR, of Danvers, *President.*
DANIEL ADAMS, Jr. of Newbury,
ASA T. NEWHALL, of Lynnfield
DANIEL P. KING, of Danvers,
RICHARD S. FAY, of Lynn,
} *Vice Presidents.*
WILLIAM SUTTON, of Salem, *Treasurer.*
ALLEN W. DODGE, of Hamilton, *Secretary.*

## HONORARY TRUSTEES.

| | | | |
|---|---|---|---|
| Frederick Howes, | Salem. | James H. Duncan, | Haverhill. |
| Ebenezer Mosely, | Newburyport. | | |

## TRUSTEES.

| | | | |
|---|---|---|---|
| Lewis Allen, | Danvers. | Wingate Merrill, | Danvers. |
| John Alley, 3d, | Lynn. | E. R. Mudge, | Lynn. |
| Jacob Brown, | Ipswich. | Moses Newell, | W. Newbury. |
| Jeremiah Coleman, | Newburyport. | Josiah Newhall, | Lynnfield. |
| Andrew Dodge, | Wenham. | Andrew Nichols, | Danvers. |
| George Hood, | Lynn. | John Northend, | Newbury. |
| Joseph Howe, | Methuen. | Thomas E. Payson, | Rowley. |
| John M, Ives, | Salem. | Gardner B. Perry, | Bradford. |
| Josiah Kimball, | Boxford. | Benjamin Porter, | Danvers. |
| Joseph Kittredge, | Andover. | Dean Robinson, | W. Newbury. |
| Elisha Mack, | Salem. | James Stevens, | Andover. |
| John Marland, | Andover. | Horace Ware, | Marblehead. |
| Royal A. Merriam, | Topsfield. | | |

## MEMBERS ADMITTED IN 1847.

| | | | |
|---|---|---|---|
| Seth Kimball, | Bradford. | Daniel Osborn, | Danvers. |
| Eldred S. Barker, | Bradford. | James Marsh. | Danvers. |
| Joseph Kittredge, | Andover. | Edward S. Mosely, | Newburyport. |
| Osgood Loring, | Andover. | John Pickering, | Salem. |
| Gideon R. Lucy, | Newbury. | Amos Smith, | W. Newbury. |
| Alfred A. Abbott, | Danvers | Abraham D. Waite, | Ipswich, |
| William D. Northend. | Danvers. | | |

☞Any citizen of the County may become a member of the Society, by paying to the Treasurer three dollars. All ordained Ministers of the Gospel who reside within the County, are admitted honorary members of the Society. Members are not liable to any assessment. Each member is entitled to a copy of the Transactions of the Society.

# LIST OF PREMIUMS AND GRATUITIES

## AWARDED IN 1847.

### PLOUGHING—DOUBLE TEAMS.

| | | |
|---|---|---|
| Elias Clough, Lynn, | 1st premium, | $10 00 |
| John Newhall, do | 2d do | 8 00 |
| B. W. Crowningshield, Topsfield, | 3d do | 6 00 |
| J. Goodridge, West Newbury, | 4th do | 4 00 |

### PLOUGHING—SINGLE TEAMS.

| | | |
|---|---|---|
| Daniel Roberts, Lynn, | 1st premium, | 8 00 |
| William R. Putnam, Danvers, | 2d do | 6 00 |
| John G. Walcott, do | 3d do | 4 00 |
| John Marland, Andover, | 4th do | 2 00 |

### PLOUGHING—HORSE TEAMS.

| | | |
|---|---|---|
| John Dow, Ipswich, | 1st premium, | 8 00 |
| John Marland, Andover, | 2d do | 6 00 |
| John Grout, Danvers, | 3d do | 4 00 |
| Josiah Crosby, Andover, | 4th do | 2 00 |

### SUBSOIL PLOUGHING.

| | | |
|---|---|---|
| Ira Worcester, Ipswich, | 1st premium, | 10 00 |

### WORKING OXEN.

| | | |
|---|---|---|
| Elijah Pope, Danvers, | 1st premium, | 10 00 |
| Ira Worcester, Ipswich, | 2d do | 7 00 |
| Francis Dodge, Danvers, | 3d do | 5 00 |

### FAT CATTLE.

| | | |
|---|---|---|
| Gideon R. Lucy, Newbury, | 1st premium, | 15 00 |
| Daniel P. King, Danvers, | 2d do | 8 00 |
| Daniel P. King, do | 3d do | 5 00 |

### MILCH COWS.

| | | |
|---|---|---|
| Abner Newhall, Lynn. | 1st premium, | 10 00 |
| A. Brackett Lord, Beverly, | 2d do | 7 00 |
| Samuel King, Danvers, | 3d do | 5 00 |
| John Stone, Marblehead, | 4th do | * |

### HEIFERS—TWO YEARS OLD.

| | | |
|---|---|---|
| Samuel C. Pitman, Lynn, | 1st premium, | 5 00 |
| Eben King, Danvers, | 2d do | 3 00 |

### YEARLING HEIFERS.

| | | |
|---|---|---|
| Samuel C. Pitman, Lynn, | 1st premium, | 5 00 |
| Robert Kimball, Ipswich, | 2d do | 3 00 |

### BULLS.

| | | |
|---|---|---|
| Allen W. Dodge, Hamilton, | 2d premium, | 6 00 |
| Horace Ware, jr., Salem, | 3d, | 4 00 &* |

*Colman's European Agriculture.

| | | |
|---|---|---|
| Howard Roberts, Lynn, | Gratuity | 2 00 |

## COLTS.

| | | |
|---|---|---|
| Horace Ware, Jr., Salem, | premium, | 10 00 |
| Josiah Crosby, Andover, | do | 8 00 |
| Nathan Dodge, Hamilton, | do | 4 00 |
| John Jacobs, Danvers, | do | 4 00 |
| Enoch Northend, Newbury, | Gratuity, | 6 00 |

## SWINE.

| | | |
|---|---|---|
| Samuel C. Pitman, Lynn, Boar, | 1st premium, | 5 00 |
| Samuel C. Pitman, Lynn, Sow, | 1st premium, | 5 00 |
| Johh Alley, 3d, Lynn, Sow, | 2d do | 3 00 |
| John Alley, 3d, Lynn, Pigs, | 1st do | 6 00 |
| Joseph M. Fuller, Lynn, Pigs, | 1st do | 4 00 |
| Israel Brown, Beverly, | 2d do | 2 00 |

## SHEEP.

| | | |
|---|---|---|
| James Marsh, Danvers, | Gratuity, | 5 00 |

## JUNE BUTTER.

| | | |
|---|---|---|
| John Stone, Marblehead, | 1st premium, | 10 00 |
| Jonathan Berry, Middleton, | 2d do | 8 00 |
| Jonas Holt, Andover, | 3d do | 6 00 |
| Allen W. Dodge, Hamilton, | 4th do | * |

## SEPTEMBER BUTTER.

| | | |
|---|---|---|
| A. Brackett Lord, Beverly, | 1st premium, | 10 00 |
| George W. Dodge, Wenham, | 2d do | 8 00 |
| Allen W. Dodge, Hamilton, | 3d do | 6 00 |
| Jonas Holt, Andover, | 4th do | * |

## AGRICULTURAL IMPLEMENTS.

| | | |
|---|---|---|
| Ruggles, Nourse & Mason, Boston, | premium, | 10 00 |
| George L. Newcomb, Salem, | gratuity | 3 00 |
| E. Goss, Salem, | do | 3 00 |
| J. & H. Hale, Salem, | do | 1 00 |
| Theophilus N. Breed, Lynn, | do | 1 00 |

## MANAGEMENT OF FARMS.

| | | |
|---|---|---|
| Daniel Pilsbury, West Newbury, | gratuity | 10 00 |

## GRAIN CROPS.

| | | |
|---|---|---|
| Moses Pettingel, Topsfield, | premium | 8 00 |

## ROOT CROPS.

| | | |
|---|---|---|
| John Peaslee, Danvers, | premium | 6 00 |
| Daniel Osborn, Danvers. | gratuity | 3 00 |
| James P. King, | do | 3 00 |
| Aaron C. Proctor, Danvers, | do | 3 00 |
| Benjamin P. Ware, Marblehead, | do | 3 00 |
| Henry Bushby, Danvers, | do | 3 00 |

## NURSERIES OF FRUIT TREES.

| | | |
|---|---|---|
| William G. Lake, Topsfield, | 1st premium | 10 00 |

*Colman's European Agriculture,

| | | |
|---|---|---|
| Charles F. Putnam, Salem, | 2d premium | 8 00 |
| Samuel C, Pitman, Lynn, | 3d do | * |
| James R. Cole, Beverly, | gratuity | 4 00 |

## CRANBERRY CROP.

| | | |
|---|---|---|
| Winthrop Low, Essex, | 1st premium | 15 00 |

## FRUITS.

| | | | | | |
|---|---|---|---|---|---|
| J. S. Cabot, Salem, | gratuity | 3 00 | C. F. Putnam, Salem, | gratuity | 1 00 |
| Otis Johnson, Lynn, | do | 3 00 | James M. Nye, Lynn, | do | 1 00 |
| Robert Manning, Salem, | do | 2 00 | James Oliver, Lynn, | do | 1 00 |
| John M. Ives, Salem, | do | 2 00 | J. O. Newhall, Lynnfield, | do | 75 |
| Eben. Brown, Lynn, | do | 1 50 | S. C. Pitman, Lynn, | do | † |
| F. Tudor, Lynn. | do | 1 50 | Sarah Howe, Lynn, | do | † |
| Moses Pettingel, Topsfield, | do | 1 50 | George Johnson, Lynn, | do | † |
| W. G. Lake, Topsfield, | do | 1 50 | C. B. Holmes, Lynn, | do | † |
| Andrew Dodge, Wenham, | do | 1 50 | J. N. Nye, Lynn, | do | † |
| William Stearns, Salem, | do | 1 50 | Andrews Breed, Lynn, | do | † |
| N. D. Chase, Lynn, | do | 1 50 | Mark Healey, Lynn, | do | † |
| J. N. Sanderson, Lynn, | do | 1 00 | Erza Johnson, Lynn, | do | † |
| J. N. Buffum, Lynn, | do | 1 00 | John Newhall. Lynn, | do | † |
| JosiahLovett, 2d. Beverly, | do | 1 00 | Cyrus Houghton, Lynn, | do | † |
| E. R. Mudge, Lynn, | do | 1 00 | M. C. Pratt, Lynn, | do | † |
| J. P. Oliver, Lynn, | do | 1 00 | Timothy Hazeltine, Lynn, | do | † |
| H. A. Breed, Lynn, | do | 1 00 | Erastus Ware, Marblehead, | do | † |
| J. B. Johnson, Lynn, | do | 1 00 | | | |

## FLOWERS.

| | | | | | |
|---|---|---|---|---|---|
| Eliza S. Brown, | gratuity, | 1 00 | Miss Lambert, | gratuity | 50 |
| Mrs. E. R. Mudge, | do | 75 | Miss Haddock, | do | 50 |
| Mary E. Chase, | do | 75 | D. C. Baker, | do | * |
| Mrs. E. Mills, | do | 75 | Stephen Oliver, jr., | do | * |
| Harriet E. Skinner, | do | 50 | R. A. Bowler, | do | * |
| Mrs. Dyar, | do | 50 | Rebecca M. Gilson, | do | 25 |
| Susan S. Ingalls, | do | 50 | Mrs. S. J. Ireson, | do | 25 |
| Mrs. George Atkinson, | do | 50 | Betsy Conner, | do | 25 |
| Mrs. Phillip Chase, | do | 50 | Martha Wing, | do | 25 |
| Mrs. Wm. D. Chamberlain, | do | 50 | John Gibbens, | do | 25 |
| Otis Johnson, | do | 50 | Mrs. S. H. Parsons, | do | 25 |
| Mrs. E. N. Mann, | do | 50 | James Oliver, | do | 25 |
| Mrs. Peter Silver, | do | 50 | N. D. Chase, | do | 25 |
| Mrs. Jas. M. Nye, | do | 50 | Mrs. Youania Newhall, | do | 25 |
| Mrs. Delnow, | do | 50 | | | |

## RUGS.

| | | |
|---|---|---|
| Elizabeth R. Norton, Hamilton, | 1st premium, | $3 00 |
| Emma E. Parris, Beverly, | 2d do | 2 00 |
| Mary Josephs, Salem, | gratuity, | 1 00 |
| Dorcas Galeucia, Salem, | do | 1 00 |
| Mehitable S. Tuck, Beverly, | do | 1 50 |

*Washington's Letters on Agriculture. †N. E. Book of Fruits.

| | | |
|---|---|---|
| Gilbert Tapley, Danvers, | gratuity | 1 00 |
| Abbey P. Smith, Beverly, | do | 50 |
| L. A. Butman, do | do | 1 00 |
| Mrs. Lydia Breed, Lynn, | do | 50 |
| Mrs. Mary A. Ross, Danvers, | do | 1 00 |

## COUNTERPANES.

| | | |
|---|---|---|
| Maria E. Johnson, Lynn, | 2d premium, | $2 00 |
| Charlotte Spinney, do | gratuity, | 1 00 |
| Mrs. Mary Coats, do | do | 1 00 |
| Mehitable H. Alley, Lynn, | do | 50 |
| Mrs. Jane H. Holt, Lynn, | do | 50 |
| A. P. Goodrich, Lynn, | do | 50 |
| Stephen Osborn, Salem, | do | 50 |
| L. H. Lombard, Lynn, | do | 50 |
| Sarah Ellen Smith, W. Newbury, | do | 50 |
| Martha J Nelson, Georgetown, | do | 50 |
| Mary E. Taylor, Lynn, | do | 50 |

## CARPETING.

| | | |
|---|---|---|
| Gilbert Tapley, Danvers, | 1st premium, | 3 00 |
| Gilbert Tapley, do | 2d do | 2 00 |

## HOSE.

| | | |
|---|---|---|
| Mrs. James King, Danvers, | 1st premium, | 2 00 |
| Mrs. James King, do | 2d do | 1 00 |
| Sarah S. Bradstreet, Beverly, | gratuity, | 50 |
| Abigail Tarbell, do | do | 1 00 |
| Abigail Nye, Salisbury, | do | 50 |
| Micajah N. Goodridge, | do | 25 |
| Elizabeth P. Woodbury, Beverly, | do | 1 00 |

## WROUGHT QUILTS.

| | | |
|---|---|---|
| Mrs. Tufts, Salem, | gratuity, | 50 |
| M. E. Hodges, Salem, | do | 1 00 |
| Charlotte Flint, Danvers, | do | 50 |

## BOOTS AND SHOES.

| | | |
|---|---|---|
| William H. Jewett, Ipswich, | 1st premium | 3 00 |
| Amos Gould, Wenham, | 2d do | 2 00 |
| William H. Jewett, Ipswich, | 1st do | 3 00 |
| Amos Gould, Wenham, | 2d do | 2 00 |
| Sumner P. Spofford, Georgetown, | 1st do | 3 00 |
| Eleazer Parrot, Lynn, | 1st do | 2 00 |
| Christopher Robinson, Lynn, | 1st do | 1 00 |
| Reuben Johnson, Lynn, | gratuity | 1 00 |
| William Peabody, Topsfield, | do | 50 |

## MISCELLANEOUS ARTICLES.

| | | |
|---|---|---|
| E. N. Pike, Lynn, | gratuity | 2 00 |
| Harriet Ellen Stone, Lynn, | do | 50 |
| Caroline H. Perry, Danvers, | do | 50 |
| Caroline E. Curtis, Lynn, | do | 25 |
| Margaret C. Merrill, Methuen, | do | 25 |

| | | |
|---|---|---|
| Dorcas A. Merrill, Methuen, | do | 50 |
| Lydia M. English, Beverly | do | 1 00 |
| Elizabeth Foster, Andover, | do | 1 00 |
| Mrs. Ashby, Newburyport, | do | 50 |
| Mrs. Lucy Smith, Ipswich, | do | 1 00 |
| Miss Bradstreet, Newburyport, | do | 1 00 |
| Caroline M. Spinney, Lynn, | do | 50 |
| A. & J. C. Batchelder, Lynn, | do | 3 00 |
| Aaron L. Holden, Lynn, | do | 50 |
| Lucy E. Estes, Lynn, | do | 25 |
| J. F. Nourse, Lynn, | do | 25 |
| Herbert L. Hollis, Lynn, | do | 25 |
| Susan P. Boynton, Lynn, | do | 50 |
| Mrs. Jane C. Damon, Lynn, | do | 50 |
| Mehitable C. Damon, Lynn, | do | 25 |
| Mercy T. Damon, Lynn, | do | 25 |
| Miss Clark, Lynn, | do | 50 |
| Raphael W. Pratt, Lynn, | do | 1 00 |
| Alvin H. Hildreth, Lynn, | do | 1 00 |
| Hannah H. Brown, Salem, | do | 1 00 |
| Samuel Sylvester, W. Newbury, | do | 1 00 |
| Hezekiah Dwinnel, Danvers, | do | 1 00 |
| William D. Chamberlain, Lynn, | do | 1 00 |
| Susan M. Newhall, Saugus, | do | 25 |
| Mary R. Kimball, Lynn, | do | 50 |
| Mrs. S. J. Ireson, Lynn, | do | 1 00 |
| Dr. J. L. Allen, Lynn, | do | 1 00 |
| Smith & Chamberlain, Salem, | do | 1 50 |
| E. T. Brigham, Lynn, | do | 1 00 |
| Julia A. D. Mullen, Lynn, | do | 25 |
| Mrs. Mary B. Smith, Lynn, | do | 25 |
| Eliza N. Small, Daovers, | do | 25 |
| Nathan Lakeman, Danvers, | do | 50 |
| Lydia A. Tapley, Danvers, | do | 25 |
| Mary P. Tapley, Danvers, | do | 25 |
| Avis Keene, Lynn, | do | 50 |
| Herbert Porter, Danvers. | do | 25 |
| Eliza A. Nichols, Lynnfield, | do | 25 |
| Abba Allen, Manchester, | do | 1 00 |
| Mrs. Wm. Decker, Manchester, | do | 25 |
| Sophia Dodge, Wenham, | do | 25 |
| Sarah L. Farrar, Hamilton, | do | 50 |
| Samuel Mansfield, Lynn, | do | 1 00 |
| Mrs. James B. Davis, Lynn. | do | 50 |
| Joseph Homan & Co. | do | 1 00 |
| Helen M. Stone, Beverly, | do | 1 00 |

## AGRICULTURAL ESSAYS.

| | |
|---|---|
| John W. Proctor, Danvers, | 10 00 |
| Gardner B. Perry, Bradford, | 10 00 |

| | |
|---|---|
| David Choate, Essex, | 10 00 |
| William D Northend, Danvers, | 10 00 |
| John M. Ives, Salem, | 10 00 |
| Total, | 562 75 |

ALLEN W. DODGE, Secretary.

Hamilton, December 22d, 1847.

## PREMIUMS OFFERED.

The list of premiums offered for 1848, will be found in the printed show bills. They are nearly the same as those of former years, with an addition of one hundred dollars premium on Forest Trees, the donation of Richard S. Fay Esq., and one of the same amount on neat stock, the donation of Charles A. Stetson Esq.

The exhibition of the Society will be held at Lynn, on THURSDAY the twenty-eighth of September next.

ERRATA. Page 46, line 25, for *yews* read *ewes*. Page 71, for *sye* read *rye*, and line 12, for *me* read *my*. Page 79, line 27, for *London* read *Loudon*. Page 111, line 20, after *short* insert *lived*. Page 114, line 14, for *soils* read *sods*. Page 118, line 33, insert *hundred* after *eighteen*. Page 120, line 37, for *cambrium* read *cambium*.

# INDEX.


Mr. Payson's Address, - - - - - - - - 3 to 13
Original Hymn, by Alonzo Lewis, Esq., - - - - - 15
Report on Stock of the Massachusetts Society for promoting Agriculture, 17 to 18
Report on Ploughing with Double Teams, - - - - - 18 to 19
Report on Milch Cows and Heifers, - - - - - 20 to 22
Statement of Abner Newhall, - - - - - 22
Statement of A. B. Lord, - - - - - 23
Statement of Samuel King, - - - - - 23
Statement of John Stone, - - - - - 24
Statement of Eben G. Berry, - - - - - 24
Statement of Samuel C. Pitman, - - - - - 25
Report on Ploughing with Single Teams, - - - - - 25 to 26
Report on Ploughing with Horse Teams, - - - - 27
Report on Sub-soil Ploughing, - - - - - - 27 to 29
Letter of E. Phinney, - - - - - - 29 to 31
Letter of Dean Robinson, - - - - - - 31 to 32
Report on Working Oxen, - - - - - - 32 to 33
Report on Fat Cattle, - - - - - - - 33
Report on Root Culture, - - - - - - 33 to 37
Statement of Aaron C. Proctor, - - - - - 37 to 39
Statement of John Peaslee, - - - - - 39 to 40
Statement of James P. King, - - - - - 41 to 42
Statement of Daniel Osborn, - - - - - 42
Statement of Benjamin P. Ware, - - - - - 43
Statement of Henry Bushby, - - - - - 44
Report on Agricultural Implements, - - - - - 44 to 45
Report on Horses and Colts, - - - - - - 45
Report on Bulls, - - - - - - - 46
Report on Sheep, - - - - - - - 46
Statement of James Marsh, - - - - - 47 to 48
Report on Swine, - - - - - - - 48
Report on Fruit Trees, - - - - - - 49
Statement of William G. Lake, - - - - - 49 to 50
Statement of James B Cole, - - - - - 50
Statement of Charles F. Putnam, - - - - 50 to 51
Statement of Samuel C. Pitman, - - - - - 51 to 52
Report on Cranberries, - - - - - - 52 to 55
Statement of Winthrop Low, - - - - - 55 to 56
Report on Fruit, - - - - - - - 56 to 57
Report on Flowers, - - - - - - - 57 to 58
Report on Farms, - - - - - - - 58 to 59
Statement of Daniel Pilsbury, - - - - - 59 to 61
Report on the Dairy, - - - - - - - 61 to 63
Statement of John Stone, - - - - - 63
Statement of Jonathan Berry, - - - - - 63 to 64
Statement of Jonas Holt, - - - - - - 64 to 65
Statement of Allen W. Dodge, - - - - - 65
Statement of Abram B. Lord, - - - - - 65 to 66
Statement of G. W. Dodge, - - - - - 66 to 67
Report on turning in Green Crops for Manure, - - - - 67 to 68
Letter of Andrew Nichols, - - - - - 68 to 70
Letter of Henry Osgood - - - - - - 70 to 71
Reports on Domestic Manufactures, - - - - - 71 to 75
Report on Grain Crops, - - - - - - 75 to 76
Statement of Moses Pettingill, - - - - - 77 to 78
Remarks on Cultivation of Forest Trees, - - - - - 78
Letter of Richard S. Fay, - - - - - 78 to 79
Letter of George B. Emerson, - - - - - 79 to 82
Letter of Morrill Allen, - - - - - - 82 to 83
Report of Committee on Essays, - - - - - 84 to 85
Essay on the Cultivation of the Onion, - - - - - 86 to 94
Essay on the Cultivation of Forest Trees, - - - - - 94 to 102
Essay on the Cultivation of the Pear, - - - - - 103 to 110
Essay on the Cultivation of the Cranberry, - - - - - 111 to 118
Essay on the Cultivation of the Apple, - - - - - 119 to 126
Treasurer's Statement, - - - - - - - 127
Officers of the Society, - - - - - - - 128
Members admitted in 1847, - - - - - - 128
List of Premiums and Gratuities awarded, 1847, - - - - 129 to 134

# TRANSACTIONS

OF THE

# ESSEX AGRICULTURAL

# SOCIETY,

FOR

# 1848.

PUBLISHED BY ORDER OF THE SOCIETY.

DECEMBER 1848.

DANVERS:
PRINTED AT THE COURIER OFFICE.
1848.

# ADDRESS

BY

## JOSIAH NEWHALL,

Mr. President and Gentlemen,

The revolving seasons having brought us to another anniversary of our Society, and to the ingathering of the fruits of the earth, and the faith of man reposed in the divine promise "that seed-time and harvest shall not fail," having again been realized; it becomes us as intelligent but dependent beings, assembled in this temple devoted to the service of the Most High, to offer to Him the sincerest gratitude of our hearts, for the numerous blessings of the passing year.

The wants of man's physical nature are constantly pressing upon him. It is an imperative law of his being, that food be taken for the sustenance of life. Hence it was that the progenitor of our race was placed in a garden, and directed "to dress it and to keep it."

The cultivation of the earth then, is the great temporal concern of man;—connected with which, comes strength of body, peace of mind, and the consciousness that we are treading a path marked out by Infinite Wisdom.

Although agriculture has been attended to with more or less success from the primitive ages, still, it has not attained to that exactness as a science, which an interest of such magnitude requires.

In by-gone ages the minds of men have been diverted from this natural and peaceful pursuit by wars waged by ambition and fanaticism, and what was gained to the cause in one age may have been lost in another. But the dawn of a brighter day has opened upon us. As the light of knowledge beams upon the minds of men, what before was considered fortuitous will be reduced to a certainty, and we may permit ourselves to entertain the pleasing anticipation, that the art of agriculture will be reduced to much exactness as a science. This great pursuit lies at the foundation of all national pros-

perity and happiness, and without it no other professions can long continue to flourish.

The object of our society is the promotion of this great interest of the community, and it must afford pleasure to all to witness the growing regard with which it is viewed: to see the most intelligent men of other professions, and the greatest men of our country, and of the world, lending their influence in aid thereof. In a retrospective view, we look with gratitude to those excellent men whose wisdom and forecast laid the foundation of an institution which has done and is still doing so much for the welfare of the farming interest. It must be a source of gratulation to all, to witness the influence which this Society has exerted on the agriculture and horticulture of the county. Many tracts of wet and at certain seasons, of submerged grounds which were of little or no value, have been thoroughly drained and made capable of cultivation, at an expense which two or three crops have fully remunerated; and the land now is among the most valuable in the county for agricultural purposes. More attention has been given to the preparation and use of compost manures. Better animals have been reared, and more attention given to their keeping. Greater care has been bestowed upon the cultivation of fruit,—old trees have been renovated and converted to valuable varieties. Young trees of every description which flourish in our climate, have been planted. Nurseries of fruit trees have been reared and cultivated with much care, and every desirable variety of these, as well as ornamental trees, can be obtained by those wanting such for orchards or ornament, which are far better adapted to this region than such as are brought from a warmer clime. In many places the streets have been adorned by the planting of shade trees, and a taste for improvement is everywhere apparent.

But a few years since under the old system of agriculture, farmers became discouraged, believing that the land had become exhausted, that its cultivation would no longer afford a living, much less a profit, and some saw no alternative but a removal to the fertile prairies of the West, a land indeed productive, but prolific to emigrants from the East, of diseases which far more than counterbalance the rich harvest which may there be gathered. The complaint is frequently reiterated that farming affords but little profit; that not much more than a living can be obtained. This in many cases

is but too true ; but an examination into the mode by which the business hitherto has generally been conducted will explain the reason. Every man knows that to encourage the growth of an animal, he must supply it with food, and to make it profitable he must supply it liberally. Between the animal and vegetable kingdom there is a striking analogy ; although the difference between a sentient and a vegetable being is great, still in relation to food and growth, life and death, there is much similarity. Withhold food from either and death is the consequence. A man might as well hope to rear his domestic animals with food barely sufficient to keep them alive and expect them to be profitable, as to attempt to grow rich harvests, without supplying, where needed, the necessary food for the growth of his plants.

Farming may be so conducted as to be made profitable, or merely to afford a living, or to run out the farm. Taking the land as it averages in the state, this depends more on the farmer than on the soil. The man who makes no provision for the raising of his crops, cannot reasonably expect any. Agriculture, like all other business, to be made profitable must be conducted with some method as well energy. What would be thought of the merchant, who should neglect to load his ships, and let them lay deteriorating at his wharf, or send them to sea half loaded or manned, and without funds for a return cargo ; or the manufacturer, who should run his machinery without system or order, and let it stand still upon every trivial occasion, while the pay of his operatives was going on ? Would not such a course bring irretrievable ruin ? And can the result be more favorable to the farmer, who, though possessing hundreds of acres of land upon which he is annually paying taxes, and who makes no adequate provision for the cultivation or improvement of which, with the exception of a few acres, and that cultivated in such a manner as not to afford a compensating return for the labor bestowed. Although the soil in some parts of the county is gravelly or sandy, still it may be made to produce rich harvests. The farmers have within their reach ample resources to convert their lands to a state of great fertility. The farmers of no section of the state are more highly favored in this respect. On the eastern border of the county, the broad Atlantic rolls in upon the beaches her fertilizing materials in great abundance. Upon the rocks between high and low water, grow weeds, containing the elements of vegetable nutrition in a high degree. At some seasons of the year, a cer-

tain kind of fish may be taken along the shore, with seines, in great quantities, and be made valuable in the formation of compost, or in the direct application to the land. The bays and inlets along the coast abound in beds of muscle, of great value ; and in different sections of the county there are vast deposites of peat, amounting in the aggregate, to many thousand acres. Providence seems to have made ample provision by these bogs for the fertilization of the soil for ages to come. While in tropical climates the decay of vegetable matter is complete, and becomes resolved into its original elements, in this temperate region the process is less rapid, and in certain situations abounding with water, the decomposing process is arrested, and peat accumulates. In this situation it abounds with acidity and is inert when applied as the food of plants. Within a few years, peat lands were considered among the least valuable, having been sold from five to ten dollars an acre, while their intrinsic value is hundreds, nay, thousands of dollars for the purpose of manure ; to say nothing of their value as an article of fuel, some of which is but little inferior to coal. This substance to be rendered available in agriculture, should be dug in the autumn and exposed to the ameliorating influences of the atmosphere during the severity of the winter. Farmers having barn cellars (and none should be without) will find that by using this material largely under their stables, to absorb the liquid and mix with the solid deposits of their animals, they may double or triple the amount of their manure, and the quality will be far better than that not protected from the wasting influence of the elements. The whole may be well mixed and suffered to ferment so far as to expel any remains of acidity and the whole mass becomes equally valuable for all thin and gravelly soils as clear animal manure, and having a more permanent effect.

The great stumbling block in the way of agricultural improvement has been the want of a knowledge of the vegetable economy, of the structure and growth of plants. Did farmers fully realize the indispensable necessity of supplying food to plants to promote their growth, that they do to feed animals, we should immediately see the commencement of an improved husbandry.

While many of the learned of every age have been engaged in disputes upon questions of no practical importance, the science of agriculture has been greatly overlooked ; and though they have been

industrious in disseminating their views, they have been of little utility to the world.

Among the ancient philosophers of Greece and Rome, while some contended for the eternity and infinite divisibility of matter, others, on the contrary, even went so far as to deny the existence of a material world, and held that the existence of man consists of nothing more than impressions and ideas. It is said of Pyrrho, one of those *soi disant* philosophers, that he carried these views to such an extent, and so far disbelieved the real existence of everything before him, that precipices were nothing; the points of swords and arrows were nothing; the wheel of a carriage that threatened to go over his neck was nothing. Insomuch that his friends who were not quite so far gone in philosophy, thought it right to protect him against the effects of his own principles, and either accompanied him themselves, or set a keeper over him under the milder name of a disciple. In modern times, views equally absurd and visionary have been entertained by such men as Bishop Berkley, and Mr. Hume, of England; Des Cartes and others of France. And in our own day, some of the follies of the ancient schools in connection with infidelity, have been put forth under the imposing name of transcendentalism.

From a table containing the number of those celebrated in different branches of the arts and sciences, from the time of Orpheus to that of Euclid; or from the thirteenth to the second century before the Christian Era; of eight hundred and sixty-three there appears to have been but twelve zoologist and agricultural writers.

It is thus seen that little comparative attention was paid to agriculture. Nevertheless, there is no occupation of man of a mere temporal nature so full of interest. Although in the progress of vegetation there is no new creation, still there is a power and energy at work which fills the mind with admiration! How is vegetation produced? How is the frame-work of plants built up, and of what composed, is a question which must press upon the mind of every man. In the darkness of ages past, this was a query which could not be solved. The seed was seen to germinate, the leaves to expand, the trunk to enlarge and the branches to extend themselves, till the seedling became a magnificent tree. The investigation into the laws of chemical science which is characteristic of the present age, lifts the veil from this hitherto abstruce and difficult

subject. Light now shines over primeval darkness, and the wondrous economy of nature is revealed.

The intelligent farmer now regards the atmosphere as the vast magazine and storehouse of those materials from which the organic parts of all animal and vegetable life is or has been derived. He sees by chemical light, the invisible carbonic acid elaborated and assimilated to the different forms of being; and he knows that from the soil the inorganic portion of the vegetable frame is obtained. And in the wondrous round of growth and decay he perceives that nothing is lost on the dissolution of organized life; One portion returns to the earth and the other to the atmosphere in the form of gas, ready to enter into new combinations of animal and vegetable life. Thus growth, decay and putrifaction are but links in that endless chain of motion which presents itself to view, and in the language of the poet—

> "Look round the world! behold the chain of love
> Combining all below and all above.
> See dying vegetables life sustain,
> See life dissolving, vegetate again.
> All forms that perish other forms supply,
> (By turns we catch the vital breath and die.)
> All served, all serving; nothing stands alone;
> The chain holds on, and where it ends unknown."

All plants are built up of organic and inorganic materials. Their organic portion consists of carbon, hydrogen, oxygen and nitrogen. When any vegetable is burned these organic substances disappear, and become converted into invisible gas, while the inorganic portions, which are derived from the soil, remain in the form of ashes. For supplying the organic materials of plants, nature has made provision in the gases of the atmosphere, which the improvidence of man can never destroy. But their inorganic portions, which are contained in the soil, and which consist in part of lime, soda, potash, magnesia, silicia, oxides, and sulphurets, he may so far exhaust as to reduce the soil to a state of sterility.

It should be the object of every farmer to guard against this great error, by returning annually to his cultivated grounds more vegetable food than was taken off by the preceding crop. Where the raising of hay is the principal object, the turning of the green sward during the latter part of summer, once in four or five years, and immediately seeding down to grass, with a dressing of compost,

is not only one of the best means of obtaining good crops, but of constantly improving the soil. This mode of culture is specially recommended for all heavy soils that are unprofitable under a hoed crop.

The tendency in agriculture, when not conducted on scientific principles, is to crop the soil till the diminished harvests pay little more than the expense incurred. This has been the case in many places cultivated during a long period.

Whatever may be the state of things in relation to some portions of our country, we believe it to be a fact that in this densely peopled region, capital invested in the cultivation of the earth if judiciously managed, will bring a sure and profitable return. The unwise and parsimonious course which has been pursued in cropping the soil till it yielded but a slight return, has been the cause why farming has been considered unprofitable and been neglected, for pursuits far more uncertain. The miserable policy of taking from the ground all that can be obtained, and returning nothing, is sure, sooner or later, to end in poverty; while a liberal return and good cultivation ensures an ample reward. There are farmers, or those so called, who consider every dollar expended for manure as money irrecoverably gone, and go on to plough their exhausted fields, to plant the seed, to cultivate and hoe the puny plants, and in the Autumn gather a harvest which scarcely pays the labor of cultivation. There are others, who go into the business with a knowledge of their profession, expend a hundred dollars per acre for enriching materials, and gather harvests which pay twenty-five, or even fifty per cent on the outlay. Thus while the one course is a mere caricature on farming, the other presents the subject in its true light, and demonstrates that the business, if conducted in a proper manner is as sure of a profitable return as capital invested in most other pursuits.

Land ploughed to the depth of ten or twelve inches, and subsoil ploughed if necessary, and well supplied with manure, will be much less affected by drought. There is a remarkable fact mentioned by Sprengel in relation to good culture, which if correct is of great practical moment. He states that it has very frequently been observed in Holstein, that if on an extent of level ground sown with corn, some fields be marled, and others left unmarled, the corn on the latter portions will grow *less luxuriantly* and will *yield a poorer*

*crop than if the whole had been unmarled.* Hence he adds, if the the occupier of the unmarled field would not have a succession of poor crops, he must marl *his* lands also. On which professor Johnston remarks;—can it really be that nature thus rewards the diligent and the improver? Do the plants which grow in a soil in a higher condition take from the air more than their due share of the carbonic acid or other vegetable food it may contain, and leave to the tenants of the poorer soil a less proportion than they might otherwise draw from it? How many interesting reflections does such a fact as this suggest! What new views does it disclose of the fostering care of the great Contriver—of his kind encouragement of every species of virtuous labor? Can it fail to read to us a new and special lesson on the benefits to be derived from the application of skill and knowledge to the cultivation of the soil?"

The vital importance of agriculture in a national point of view may be seen in the consequence of its neglect a few years since, when a speculating mania seized the minds of the community, and the cultivation of the earth was in a great measure neglected; when the regular harvests of the field were of too slow a growth, and yielded too small a profit to satisfy the minds of those, who, blinded by visions of golden harvests to be reaped in a single day, looked upon agriculture as unworthy of a moment's regard;—and the melancholy spectacle presented itself of this immense and fertile country being under the necessity of importing bread from Europe! Had this mad career been persisted in, it is obvious that we must, as a people, have rapidly descended the path of national ruin. But these schemes have passed away "like the baseless fabric of a dream." More just and sober views have succeeded and this great pursuit of the nation has been prosperous.

According to the report of Mr. Burke, the Commissioner of Patents for the last year, the value of the grain crops and the great agricultural staples of the country, amounts in round numbers to eight hundred and thirty-eight millions of dollars. The value of the products of orchards, gardens and nurseries is estimated at fifty-four millions. The value of live stock, wool and dairy products amounts to two hundred and fifty-two millions. The value of the products of the woods and forests amounts to fifty-nine millions,—making a total of more than one thousand, two hundred millions of dollars for the products of the soil for a single year. From the same source I

give an estimate of the income of the other industrial classes. The income of all the manufactures in the Union for the same year, is estimated at five hundred millions of dollars. The profits of the fisheries seventeen millions. The profits of trade and commerce at twenty-three milions; and of professions, rents, banks and money institutions, one hundred and forty-five millions,—making a total of seven hundred and eighty-five millions of dollars. By these estimates the amount of the industry of the country for a single year is one thousand nine hundred and eighty nine millions of dollars. Of this immense sum nearly two-thirds is the produce of agriculture

Here is a lesson for those who have regarded agriculture as of minor importance, and considered other pursuits of more consequence,—and also to residents of our great commercial cities, who, being accustomed to the noise and activity of those crowded marts, have looked upon commerce as the great leading interest of the Union. These estimates will correct such views and show that although the interest in commerce is great, yet contrasted with that of agriculture it is comparatively insignificant. The same amount of income from trade and commerce as that of 1847, would not in fifty years equal the estimates of the income of agriculture for that year.

These extracts and comparisons are not made for the purpose of undervaluing any of the great industrial pursuits of the country; far otherwise—for all the different professions are reciprocally beneficial and go to swell the aggregate of national prosperity; but for the purpose of rescuing the profession of agriculture from the unjust estimate it has held in the minds of some, and of presenting the subject in its true light.

It is agriculture which enables us to receive and supply the wants of those thousand of oppressed and destitute immigrants who are annually seeking an asylum on our shores, from foreign oppression.

It was a successful agriculture which enabled us so recently to send relief to the famished inhabitants of a transatlantic region,—not only to supply them commercially, but to extend the hand of a nation's charity.

What scene more touching than that, when the destitute inhabitants of that distant land, hourly sinking to the grave for lack of bread, saw in the distant horizon, through the mist of Death which

was fast gathering around their dying vision, the flag of the Republic approaching; whose hostile appearance would now fill the greatest nation with apprehension; but on that occasion waving over a national ship, divested of the thunders of war, and hastening on the wings of the wind, deeply laden with the means of relief to suffering and dying humanity. Such a scene cannot be fully realized, but by the rescued and grateful sufferers; and will forever stand a glorious memento of the gentle charities of the christian life to destitute humanity, though the billows of a mighty ocean intervened!

Of the various kinds of produce raised by the farmers of the county, fruit may be considered the most profitable. Of the different sorts which may be easily cultivated, the apple is undoubtedly the most important. Its cultivation is daily becoming of more interest. Not only is the home market for this fruit increasing, but an export demand increases with its cultivation. The great improvements in physical science during the present century have given an impetus to business unknown before. By means of steam power the distant parts of our extensive country have been brought comparatively near, and even European markets have been brought within a fortnight's sail. The great facilities thus afforded for the exportation of articles of a perishable nature like the apple, and the high estimation by foreigners of this fruit grown in the United States, will cause a demand for exportation which will outrun the supply, unless more attention be paid to its cultivation.

The wild crab, the type of the cultivated apple is indigenous to this continent; still it is supposed that the origin of our cultivated apple was extra-American. However this may be, it is certain that this fruit flourishes a few degress on either side of the fortieth parallel of latitude in this country with a degree of vigor unsurpassed.

In planting orchards an error is frequently committed by setting the trees too near together. On good soil, suitable for an orchard, and for one which is to be thoroughly cultivated, forty feet is the least distance at which they should be set. Great care should be taken to select such varieties as are known to be productive and of vigorous growth. There are many kinds of excellent quality but so unproductive as not to be fit for extensive cultivation. Care should also be taken not to select varieties growing old and declining. I very well know that different opinions are entertained in relation to the duration of vigorous existence of trees.

It is the belief of some that any given variety of fruit may be continued, and profitably cultivated indefinitely; and that the apparent decline of some old varieties, is owing to the want of care and good culture. This view of the subject I think must be erroneous, and lead to disappointment and loss. In the first place proof to demonstration of the decay of old fruit trees, is seen in specimens which have been growing in the county from its early settlement; many of which have entirely decayed. Scions from others which have been grafted on thrifty seedling stocks, although they still live, bear every mark of old age;—while the under branches of the young stocks upon which the old scions were inserted, annually produced a vigorous growth.

In the second place such a theory is unphilosophical and repugnant to natural laws. Throughout the whole system of organized being we see an incipient existence, a full maturity, and a state of decay, and finally, of death. There is nothing immortal "in this diurnal scene." If a man should tell you that he possessed an animal that would never die, or that he, himself would live forever, you would consider him insane. Nature has made provision for the continuance of species by seed; and when it is stated that some of the fruits now extant, were cultivated in the time of Julius Cæsar, the highest probability exists that they are the reproduction from seed of those ancient fruits; and bearing so near a resemblance to their parents as to be mistaken for the same.

Some have been deterred from planting fruit trees from a belief that it would take more time than one generation before they would become productive, and that he who planted trees, planted for posterity. While this should be one motive for so doing, the young man who plants the apple tree and cultivates it well, will, in a very few years receive an ample return. Trees of good size when taken from the nursery and carefully set and properly cared for, will produce a barrel of fruit each, in seven or eight years.

The cultivation of forest trees demands the consideration of every land-holder. It is a subject connected with the true interest of the county. We trust that the increasing intelligence of our citizens, encouraged by the premiums offered by this society, and by the very liberal one offered by an intelligent citizen of Lynn,* for plantations

* Richard S. Fay, Esq.

of the oak, will be the means of effecting an object so desirable. Some portions of Europe have been converted to mere deserts, by destroying the forests,—the sand being blown about like the waves of the ocean; and in some cases threatening to overwhelm and destroy whole villages. In some parts of our county there is a great deficiency of trees, while at the same time there are many tracts of land which are unfit for cultivation, upon which trees would readily flourish. The feed on much of the open pasture land would be increased, as well as comfort afforded to the animals, by planting forty or fifty trees of the yellow locust to the acre, the income from which in a few years would equal the value of the land. Trees protect a country from the force of winds, attract the moisture of the atmosphere, prevent too great evaporation, and have a tendency to promote the health of the inhabitants, as well as to add beauty to the landscape. Says one, "there is nothing in the compass of animated nature so interesting as trees. They speak a language to the heart which none but a heart of utter insensibility can fail to understand. It must be noticed by every observer that even the brute creation feel a veneration for trees. They form a part of almost every implement and every machine by which the genius of man has taught him to lighten the labor of his hand. There is that in a tree considered as an individual work of the Creator which may well excite our attention and most amply reward our study."

Indian corn is worthy of more attention than is usually bestowed upon it; not only for the grain which it produces abundantly, but for the large amount of fodder, when raised for that purpose. It bears high culture, withstands the drought well, and produces more to the acre than any other grain. An error is frequently committed in its cultivation by removing at the last hoeing the suckers which spring from the root. The male blossoms on the main stock under ordinary circumstances do not remain in vigor more than four or five days, and frequently not so long. And this length of time is only sufficient to fertilize the earliest ears, in which the female blossoms come out first from the lowest grains and present themselves at the ends of the corrola or husk, and as they come out are fertilized. Thus, they are daily presenting themselves until the whole are fertillzed. But if the heat of the weather, or other causes destroy the male blossoms before the whole of the female blossoms appear, then if there be no suckers to supply the fertilizing powder, a

portion of the upper end of the ear will be without grain. To supply this deficiency, suckers successively spring up from the root, and afford a supply of the fertilizing material for the ears that may be produced for two or three weeks after the main stock is dead. On the male blossons from the suckers, therefore the greatness of the crop very much depends.

In relation to the origin of the disease which has so disastrously affected the potato plant, no satisfactory cause has yet been discovered. Some facts having connection with the subject have come under my observation. One is, that the disease is not continued from one year to another by diseased tubers; for plants which have been grown from potatoes almost entirely decayed, have produced healthy and sound crops. Another is, that new varieties produced from the seed were even more affected by the rot than old varieties. This, I think, goes to show that the malady must arise from some other cause, than the long-continued cultivation of varieties, without being renewed from seed.

The best means of insuring a healthy crop is to plant early sorts early in the season. When we see whole fields struck down in the short space of a day or two, whatever may be the pre-disposing cause, we cannot but think the disease to be of atmospheric influence. We may reasonably hope the malady will ere long pass away, and the potatoe again flourish with its former vigor.

Aside from the disease, I would remark that the practice of planting the largest and over-ripened potatoes, has a tendency to enfeeble the plant and shorten the crop. While all seeds perfectly ripened produce the best plants, it ought to be remembered that a potato is not a seed. While therefore, well ripened potatoes are the finest for the table, they are the least fit to plant. A potato perfectly ripened has lost much of its vegetative power, and when planted, sends up feeble shoots, and frequently produces a small crop, whereas such as have not arrived at maturity in the autumn, when planted in the spring, come up strong and vigorous plants, and produce large and better crops.

I would call the attention, and press upon the minds of young men,—the farmers' sons,—the importance of knowledge, and that knowledge which is indispensable to a successful prosecution of their calling. They happily have opportunity for improvement during the evenings of winter which young men who labor in mechanical

pursuits are often deprived of. The price of knowledge is labor. Without study, the mind must remain barren, like a neglected garden. If young men spend the long evenings of winter, so favorable to study, at places of idle resort, in the hearing of profitless conversation, they must necessarily grow up with little more information than the ox which draws their plough. When such arrive at manhood, and you see them in the distance, you suppose them to be men, but it is only in appearance, for they have neglected to cultivate the mind, which raises man above the mere animal. Such is the importance of knowledge, that young men should tremble at the loss of a single hour!

For the encouragement of all who are "in pursuit of knowledge under difficulties," let me remark, that at the present day it is of no practical importance whether they graduate from the halls of a College or University, or from the attic of their own dwelling, provided they have acquired that knowledge of science, and of the world, which shall enable them to discharge all of life's duties in a proper manner. (It can be of no moment to such men in after life whether they carry in their pocket a parchment from some scientific Institution, confering upon them the honor of Doctor of Laws, if they understand the natural laws and are able to act in accordance therewith in the varied duties of life, there can be no greater proficient.) The means of information are within the reach of all. Science is no longer muffled and hid from the public gaze. No people have ever been so favored for the acquisition of knowledge. The common schools, those glorious institutions of New England are laying the foundation for the highest attainments. Every boy, after having become familiar with the elementary principles there taught, is in a situation to improve himself in the various branches of science. Chemistry is intimately connected with agriculture, and should engage the attention of every young farmer. Zoology comes in for a share of his attention. The habits of the insect tribes which often commit greater ravages than the larger animals, should be understood, the more effectually to guard against their depredations. Botany, so useful and so interesting, should engage the earnest attention of the young of both sexes. It has arrested the attention of the observing of every age. The wisest of men, although the cares of a splendid kingdom rested upon him, was intimately acquainted with all plants from the graceful cedar which crowned the

hills of Lebanon, to the humble moss which invested the walls of Judea. And He, who was greater than Solomon remarked on the glories of the lillies of the field.

The light which this science sheds upon the operations of nature places within the reach of all, the means of improving the various products of the earth, by the cross fertilization of the flowers of plants of different varieties of the same species. The sexes of plants which botany unfolds, and which gives man a controlling influence over the vegetable kingdom, was, till recently, wholly unknown. Lord Bacon, who wrote in the sixteenth century, and whose brilliant mind seems to have had glimpses into futurity, says, in speaking of the animal world, "we see that there are compound creatures, the offspring of different varieties," and in relation to the vegetable kingdom, he says, "The compounding or mixture of kinds in plants is not found out; which, nevertheless, if it be possible, is more at command than that of living creatures; wherefore, it were one of the most notable experiments touching plants to find it out, for so you may have great variety of new fruits and flowers yet unknown." These suggestions of that great man have since been realized, and to their practical effects we are indebted for some of the finest productions of our gardens. With this controlling influence over the vegetable kingdom in our hands, what improvements may we not anticipate in the future?

As a taste for rural pursuits increases, may we not hope to see all our waste lands and hill-tops covered with trees? Our dwellings and gardens enclosed by walls of evergreens; and when the slavery of fashion shall give place to just views of God and his works,—the ladies will then desire a portion of such beautiful enclosures for the formation of parterres, for the cultivation and study of flowers,—those "smiles of God through his vegetable works."

The pursuit of agriculture is not only favorable to man's physical well-being, but is eminently conducive to the improvement of his moral nature. The farmer is that favored being who is permitted as it were to stand in the laboratory of the Infinite One. While many of those engaged in other useful and important occupations are necessarily confined within the narrow limits of their study or work-shop, his office or place of business is the vast temple of nature. He seems, more than others, by his daily occupation, to be admitted to nearer approaches to Him, whose humble co-operator

he is, in producing the means of sustaining life. While the artist and mechanic, by their skill and ingenuity, as they operate upon dead matter, can produce results in accordance with their wishes. he feels that, in dealing with the vital principle, without the direct smiles of Heaven upon his labors, he can produce nothing. When the rain is withheld, and the "heavens become as brass, and the earth as iron," and vegetation seems to be perishing, how often is his eye directed to the horizon, that perchance he may see, as did the servant of the Prophet, a cloud rising, though not larger than a man's hand, and giving promise of the needful blessing. He beholds therefore with the deepest interest the progress of vegetation from the opening of the vernal season to the closing autumn. When the mighty forces of nature are quiescent, he sees their silent energy in the beaming sun and the gentle zephyr. And in their awful manifestations, he recognizes in the lightning's gleam, the glance of that eye, whose all-pervading sight reads the unspoken language of the heart! And in the bursting thunder, and the fearful earthquake, he hears with awe, the accents of "the voice that shakes all nature's frame."

The volume of nature is wide spread before him; and whatever may be the dogmas, which men may have derived from other sources, respecting the character of the Creator, he here reads in this "elder scripture" the impressive and all-subduing lesson that God is good. That his paternal care is extended to every creature, and that all, from man to the humblest insect, are the monuments of his exhaustless love.

With such exhibitions daily before him, and with a knowledge of the divine economy in the natural system, where every thing changes, but nothing is lost; where from apparent annual death, arise new forms of beauty and loveliness;—the farmer, after a life well spent in the pursuit originally assigned him, bows to the law of his being, wraps his mantle about him, and lies down in the sleep of death, with the most unshaken faith in the accordant lessons of nature, and of revealed religion, that he shall awake in those celestial scenes, the glories of which, "eye hath not seen, nor ear heard."

# HINTS

FOR THE

## CONSIDERATION OF THE TRUSTEES,

NOVEMBER, 1848.

By the President of the Society.

Thirty years having elapsed since the organization of the Society, there is propriety in a retrospective glance, to ascertain what encouragement, if any, may be found for the guidance of our future movements. In this way alone, can a profitable application of the lessons of experience be made.

Among the objects that first arrest the attention, are the lessons of instruction, from the first President of the Society, by whose enlightened enterprise it was founded. No one who did not witness these can ever duly appreciate the obligations the Society are under for his wisdom and perseverance. He entered the forests, as it were, axe in hand, and cleared them for our use.

Conspicuous on the early pages of the Records, is an elaborate report on the principles of Free Trade, as then advocated by the dominant party in New England. This is adverted to, not for the purpose of discussing the views then expressed, which were without doubt honestly entertained, but which would probably be cautiously assented to at the present time, but to draw therefrom a lesson of instruction, against adopting with too much confidence, any opinions on speculative subjects. If minds like his, clear and honest, could be in error, how much more likely to be wrong are those of an inferior order? All topics of a party character should be scrupulously avoided, in the management of an institution like this. Nor should any theories be countenanced or approved, until tested by experiment. If we would have our opinions of value, in the estimation of others, we should be cautious in the expression of such opinions.

### MEMBERS OF THE SOCIETY.

The preservation of the ranks of our members has not received that attention its importance demands. Previous to the first exhibi

tion, at Topsfield, about seven hundred names were enrolled. Since then, there have been additions annually, of such as voluntarily offered themselves,—but not so many as have been lost by death and removals. It is believed, that a careful revision of the list of numbers would show not more than *five hundred* names, if so many. While the population of the County has nearly *doubled*, our members have diminished almost *one half*. Ought this to be so? Ought not some measure to be adopted to save the edifice from crumbling to ruins? Is the object for which we associated of any less importance now than it was then? Is there less public spirit among our citizens now, than there was then? Are they less able to encourage an institution of the kind, or less intelligent in appreciating its advantages? Few, we believe, will readily answer either of these inquiries affirmatively.

The continued liberality of the State, which has enabled the Society to offer our premiums annually, although to a limited extent, and the adoption of a system of economy that has kept its expenditures within the income, have had a tendency to prevent the enlisting of new members. Especially, while those who were not members, were permitted to enjoy equal privileges, in competing for premiums, as those who were. If care had been taken to increase the funds by the addition of *seven hundred new members*, who have come upon the stage since our operations commenced, who would have been ready to join, if properly solicited to do so, this addition could have been advantageously appropriated, in the new modes of improvement, that would have been brought forward.

In fact, those who have directed the concerns of the Society, have always felt themselves constrained, not by the want of objects of premium, but by the want of means to afford them; and by the desire to give permanency to the funds, that should enable the Society to continue its operations, if perchance, anything should happen to discontinue the Legislative bounty. But there is no reason to fear any such discontinuance. Whatever party may be in power will not presume any such thing. Among all the fanciful projects of economy that have been agitated, we have never heard an intimation of the expediency of withholding the bounty to agricultural societies. On the contrary, the appropriation has been very generally approved; and it remains with the farmers, themselves, to say, when instead of *six hundred dollars* annually, there shall be given

*one thousand dollars* annually, to each of the societies. Is this a visionary project? Could it not be done by a little exertion? Appoint your agents to solicit subscribers. Let a memorial be presented to the Legislature, setting forth the benefits to accrue therefrom; let the other societies in the Commonwealth be solicited to cooperate; and three chances out of four, another year would crown the enterprise with success. There is nothing like trying. Something has been done for agriculture, but not so much as its relative importance demands. Who that remembers the eloquent remarks of the veteran advocate of the "plough, the loom and the anvil," at our late exhibition, was not forcibly impressed with the conviction that the farmers have been faithless to themselves? Merchants and manufacturers do not act thus, when their interests need support. Let us summon to our aid a portion of that public spirit which characterized a PICKERING, and a SALTONSTALL, names that will ever be remembered with respect in the history of our Society, and the work will be more than half accomplished. If farmers would be true to themselves, others would be true to them. If they will not, who can they blame but themselves? "He that provideth not for his own," as hath been truly said, "is worse than an infidel."

## PLACE OF EXHIBITION.

The places of exhibition, have been among the most exciting topics that have engaged the attention. This was peculiarly so, for several of the first years. There seemed to be a very general impression, that it was desirable to have some central position permanently established; but none such could be agreed on, affording general satisfaction. Of late, since the facilities of communication from all parts of the County have multiplied to such an extent, that any citizen of the County can readily be at the place of exhibition, at nine o'clock in the morning, the inquiry is not so much, *where* it shall be, as *what are the conveniences offered*, and what kind of cooperation will be found in the place proposed?

Having been at Lynn for three years last past, with success unparalleled, owing, in a great measure, to the active cooperation of several enterprising and liberal citizens there, the time has come, when a change of position will probably be thought expedient. This is a subject to be acted on by the Trustees, at this time. Our success depends much upon the decision that may be made.

Wherever we go, it will be best to continue more than one year. No place should be chosen, where the people of the place are not ready to cooperate and lend a helping hand. The advantages that will accrue to the immediate neighborhood, if not to the individuals who may be the most active, will justify such assistance. Without this, it is impossible to have a successful exhibition.

Since military displays have been laid aside, agricultural exhibitions have served to interest and amuse the public. Something of the kind seems to be absolutely indispensable. We know of nothing that better combines the agreeable with the useful, than these exhibitions, when properly regulated. But, we protest most distinctly, against their being misused as theatres of dissipation, as has sometimes been witnessed, even in our own County.

## AGRICULTURAL LIBRARIES.

The establishment of an Agricultural Library, for the use of those who may be desirous of availing themselves of this medium of instruction, is a topic worthy the particular attention of the Trustees. Such libraries have been established by other societies with great benefit. Many volumes are annually issuing from the press, abounding in information, that would be perused by many with interest, if they could be commanded. What better use could be made of a small portion of our income, say *fifty*, or even *one hundred dollars* annually, than to lay the foundation of such a library? If it had been commenced twenty years ago, and only five and twenty volumes had been annually added, the collection would now have been respectable. Let it be begun, and without doubt, there will be found many, who will readily lend a helping hand. Set the ball in motion, and moisten it by exertion, and it will accumulate by every revolution. We are not of the number who would rely entirely upon *book knowledge*, but we think that man is far from being wise, even in the consideration of agricultural subjects, who discards the use of books entirely. Books, when properly prepared, place at our command the essence of the practical observations of centuries. Some may hesitate about the *place of deposite* or *position* of the Library. This should be no obstacle in the way. Get it, and enough will be found to take care of it; and more, to read it. For the young man, it is indispensable; for the old man, it will be found highly useful.

## CULTIVATION OF ENTIRE FARMS.

Whoever examines our Transactions for information, will find it best condensed, in the statements of the cultivation of entire farms, and the reports thereon. This should stimulate to renewed efforts to revive these premiums. Not simply the *offer* of them, but the bringing forward of claims to merit them. There is scarcely a town in the County, that could not annually present the statement of the cultivation of some farm, that would be a source of useful instruction. If this information cannot be secured in the manner heretofore practiced, let it be done as in the Counties of Plymouth or Middlesex, by a viewing committee, who will seek out what is interesting, and not wait the tardy movement of the *diffident cultivator*. There are many, who will readily communicate, when solicited, who will not come forward of their own motion. Among these, three times out of four, is real merit most likely to be found.

We are somewhat flattered, when we see references to what has been done by our Society, in obtaining and diffusing information; but have we not reason to be more mortified, when we reflect upon what we know has been left undone? I appeal to your candor, gentlemen, who should know the state of agriculture in the County, whether this is not so? Is there any one of you, for example, who can, with any confidence, answer the inquiry. What proportion of the bread stuffs consumed in the County, is raised in the County? I ask each of you, without consultation with others, to give me your opinion on this question. Hand in your ballots, if you please. Our notions on these subjects are apt to be vague and indefinite. It should be the aim of societies like this to correct them. The merchant, who wishes to conduct his business with success, has his correspondents in all directions, and understands from them the prospect and the state of the market. Before he undertakes to forward a cargo, he inquires whether it will be wanted, where it is to be sent. Why should not the farmer do the same, before he undertakes to plant his fields. True, he knows that a certain portion of produce will be needed for the consumption of his family, because his father before him raised about this amount. But the man who is ambitious of being considered an intelligent cultivator, should not rest satisfied with this knowledge. Is it not possible to adopt a plan of securing returns annually, from every town in the County, of such statistical information, as when properly arranged, would be of great

value? Who can so properly undertake this matter, as the Agricultural Society of the County? The State Society of New York require this of every County Society. The State Society of Massachusetts, when under the guidance of a Lowell and other kindred spirits, used to do something to encourage and enlighten the farmers of the State. Since the County Societies have presumed to start ahead, the State Society seems to have been stationary. Any one, who sees what is doing, annually, in the State of New York, will be satisfied that much remains to be done in Massachusetts. A review of the State Agricultural Record, as compiled by our own faithful and intelligent Secretary, will show that much remains to be done; and that new exertions are necessary, to enable us to keep pace with the improvements of the age.

## TRUSTEES' MEETINGS, &c.

Those who had the privilege of being present at the early meetings of the Trustees, will remember the interest that was awakened by the discussions that were introduced. Latterly, the meetings have been so entirely occupied with the transaction of business, that little or no time has been given to discussion. If the meetings could be more frequent, with an understanding that gentlemen would come prepared to communicate and receive instruction, the purposes of the Society might be more fully accomplished. It need not be imperative upon all to attend; let those who do come, bring with them such kindred spirits as are among their associates, and the meetings might be made a school for mutual instruction. Whatever is worth doing at all, is always worthy of being well done. Bearing in mind, that nothing can be accomplished that is not commenced, I have ventured to propose the foregoing considerations, to be acted on or not, as may be deemed expedient. If any or all of them shall be found worthy the attention of the Board, at this or any subsequent meeting, I shall feel that I have, in some measure, contributed to the advancement of the interests of the Society.

Perhaps, it may be deemed expedient, to appoint Committees on the principal topics suggested, viz.: the next place of exhibition, the increase of members, the formation of a library, the selection of subjects of premiums, the securing returns of statistical information, &c., &c., with instructions to report at an adjournment of the meeting.

# REPORTS, &C.

## REPORT ON FOREST TREES.

The Committee on Forest Trees regret that no competitors have appeared to claim the premium offered by the Society. Notwithstanding the liberal action of the State in relation to this subject, the publication of Mr. Emerson's report and of numerous essays, of late, upon the importance and profit of forest planting, there does not appear to be any newly awakened action among the farmers of Massachusetts. The acorns still fall unheeded from the few oaks which remain, the pine cones still open themselves upon their boughs, the wind blowing them where it listeth, the cattle are still allowed to gain a scanty and hard subsistence by grazing over lands that nature plants, but plants in vain. Shall this continue? In the hope, though almost a forlorn one, of arousing attention among the farmers of Essex, upon this interesting matter, we propose to say a few words about planting trees, or more properly speaking, making timber plantations from the seed.

We have not the space allowed us to enable us to descant upon the pleasurable satisfaction to be taken in seeing one's trees growing from year to year, adding new beauty to our estate, nor to enlarge upon the inward content that fills the breast, as we behold woods of our own planting springing up around us, for which those who succeed us will bless our memories, and which may afford the most pure and unalloyed enjoyment to generations yet unborn. We shall confine ourselves to the subject as a mere matter of thrift, and we shall speak of a tree only in the light which the Laird of Dumbiedikes viewed it. "Jock, when ye hae naething else to do, ye maybe aye sticking in a tree; it will be growing, Jock, when ye're sleeping." Before proceeding, however, more minutely with those considerations which we hope will induce some few to attempt forest planting, we wish to notice, and if possible, to overcome the objection that is always foremost, when we press tree planting upon the notice of our friends and neighbors. It is an objection more deeply felt than ex-

pressed, because we are hardly willing to have so selfish a hindrance appear in all its strength, and it is this. We are told, that it is a species of improvement from which we ourselves cannot hope to reap the benefit, since our lives are too short to witness the maturity of trees of our own planting. This is a weak and selfish objection, at the best, and it is false, too, in its premises. The first Duke, John of Athol, for example, saw a British frigate built entirely of Larch of his own planting. It will be seen, moreover, if we will examine a little into the subject, that the benefits commence at once in the increased value given to the land planted. In another point of view, as a provision for our children, how important planting becomes. There is no surer way of making a provision for one's children, than by planting timber trees. The advantage of restoring portions of our worn out-lands to wood, are also most important to New England welfare. We are every year developing more highly the mechanical arts, and in their progress, wood, in various forms and for numerous purposes, is required. Our lands have been already stripped of the most valuable kinds, for these purposes, and no measures are being taken for a new supply. They have been pastured upon and exposed to our cold and piercing winds, until, in many cases, the power of vegetation is nearly lost. Now, who can not foresee a prospect for an increased demand and value for every species of wood that grows? Do we not perceive this enhancement from year to year?

We come now to such data as we have been able to obtain from practical persons, as to the profit and loss of planting; and we shall commence with those furnished by the English and Scotch planters, who have made planting the business of a life-time, in a country where planting forest trees has been practised for centuries. And first, we shall extract from the Transactions of the Highland Society, a slight notice of the Larch, a tree which has been found to agree singularly well with our bleakest and most hungry soils.

"Larch will supply ship-timber at a great height above the region of the oak; and while a 74 gun-ship will require the oak timber of 75 acres, it will not require more than ten acres of larch; the trees in both cases being sixty-eight years old. The larch, instead of injuring the pasture under it, improves it. The late Duke of Athol, planted in the last year of his life, 6500 acres of mountain ground solely with larch, which in the course of 72 years from the time of

planting, will be a forest of timber fit for the building of the largest class of ships in Her Majesty's navy. It will have been thinned out to 400 trees per acre. Each tree will contain, at the least, 50 cubic feet, or one load of timber, which at the low price of one shilling per cubic foot, only half its present value, will give £1,000 per acre, or in all, a sum of £6,500,000 sterling. Besides this, there will have been a return of £7 per acre, from the thinnings, after deducting all expense of thinning and the original outlay of planting. Further still, the land on which the larch is planted, is not worth above ninepence or one shilling per acre, yearly rent. After the thinnings of the last thirty years, it will be worth ten shillings per acre, by the improvement of the pasturage."

Montieth, an experienced timber planter and appraiser of timber land, gives the following statement of the profit of an oak plantation for twenty years, on one hundred acres of land, worth five dollars per acre, yearly rent, and I have placed the estimate in dollars, instead of pounds sterling.

If the proprietor, he says, plants 100 acres of ground, the trees being four feet distant from each other, each acre will contain 3422 plants.

| | | |
|---|---|---|
| Plants and planting per acre, $30, | | $3000 00 |
| Rent of land for 10 years, at $5 per acre, | | 5000 00 |
| Interest on rent, | | 1125 00 |
| Expenses of thinning, pruning and trimming, for 10 years, at $5 per acre, | | 5000 00 |
| Total expenditure, | | $14,125 00 |
| Deduct produce of 1000 trees, thinned from each acre, 1st 10 years, at $10 per acre, | $1000 00 | |
| Deduct value of 2422 trees per acre, remaining, at $37 50 per acre, | 3750 00 | 4,750 00 |
| | | 9,375 00 |
| Balance at the end of 10 years, | | 9,375 00 |
| Expense of thinning and pruning, for 2d 10 years, at $10 per acre, | | 2000 00 |
| Rent of land for same period, at $5 per acre, per annum, | | 5000 00 |

| | |
|---|---|
| Interest on do., | 1125 00 |
| Int. on $9,375, old balance for 10 years | 4685 00 |
| Total outlay for 20 years, | $22,185 00 |
| Deduct produce of 1000 trees thinned out from each acre, at 12½ cents per tree, at $125 per acre, | 12,500 00 |
| Deduct for enhancement of value, during the last 10 years of 1422 trees per acre, remaining at $160 per acre, | 16,000 00 |
| | 28,500 00 |
| Leaving an actual profit, after paying rent, interest and expenses, of | 6315 00 |

Up to this period, the *comparative* gain is small, but the same calculation continued for 10 years more, will show a profit of $118,335 00, and the end of forty years from the time of planting, the round sum of $205,000 00.

These calculations, as Montieth remarks, may to those who have paid no attention to the subject, excite wonder, if not doubt, but in making them, he says he has been careful to lessen rather than to exaggerate the profits.

The following facts, given in the Encyclopedia Brittania, of Art and Agriculture, confirm Mr. Monteith. Mr. Pavier, in the 4th vol. of the Bath papers, computes the value of fifty acres of oak timber, in one hundred years, to be $60,000, and Evelyn calculates 1000 acres of oak in 150 years, at no less than at three million and three hundred thousand dollars. Both these writers, who are of known authority, made their calculations at a period when the timber was of less value than at the time of Montieth's calculation, by at least one half.

Let us hear what Mr. Low, in his valuable work, "Landed Property and the Economy of States," says. "The planter has been characterized as the most disinterested of men, because he labors for posterity. The claim of the planter to this distinction may be questioned, although he may enjoy the thought that the workmanship of his hands will not perish with him. Like every one who labors from choice, the planter experiences gratification in his pursuit. The little tree which he places in the ground, quickly becomes a part of the landscape around; and thus the taste is gratified, almost as soon as the work is done. In a few years more, his woods yield

shelter from the winds and thus increase the value of the lands around, while it is rarely beyond the expectation of human life to look for a direct profit from the wood as it advances to maturity. To expend capital on planting, indeed is merely to lay out a fund to increase at interest, and often at a high rate of interest. Let it be supposed that a wood requires 60 years to reach the age of good timber; that the land is worth one dollar per acre* of yearly rent in its original state; and that the expense of planting and inclosing it is twenty-five dollars per acre. Then rating money at 5 per cent, supposing it to increase at compound interest, the amount will be found by calculation, for 60 years together with the assumed yearly rent of one dollar per acre for the same period, to be nine hundred dollars per acre. So that if the wood be worth that sum, it will return the capital, interest and rent. But the sum of $900 per acre, would be very small, including the progressive thinnings made during the period for timber of even the least valuable kinds, of 60 years standing, and therefore, it will be seen that wood may yield a high return on the capital expended.

It will be seen in all the estimates of profits of forest plantation in England, a considerable item of cost is the annual rent of land, varying from five dollars to one shilling per acre; another large item is fencing and inclosing. James Brown, in a work of much utility and excellence upon this subject, makes the cost of fencing one half the expense. In the planting which we propose to the farmers of Essex, we shall make no account of these items of expense in England, because the lands which we shall recommend are those that have been used as pastures and fields, worn out by poor cultivation, which are almost universally fenced or walled, and which are hardly worth in themselves the walls that inclose them. They possess no yearly value, to be placed among the items of expense in forest culture, although we shall allow interest upon one that we shall assume.

With these premises, we now propose to urge upon every farmer in the County, to take any worn out field, huckleberry pasture, or other waste land, and to convert it into a wood plantation, whether of birch, larch, pines, oak, ash or maple, or all combined. And we will endeavor to give a fair statement of the transaction, valuing his own time and attention at the highest market price for farm labor.

In the first place, it must be observed, that in the estimates of

* In this extract, pounds and shillings are converted into dollars.

the cost, we assume the work to be well done; for, unless it be so, it had better not be attempted. Merely putting an acorn in the ground, or any number of acorns, is not forest planting. They will germinate, undoubtedly, but they will remain of no value after they have come up for many years, unless something more is done. It would be as unwise to plant a field of acorns, without preparing that field, as to sow corn or potatoes without ploughing, manuring and after cultivating the ground. We shall, in another place, speak more particularly of this; we speak of it now, lest our estimates should appear high. So in calculating the value of the product, we assume a rapid production, such as care and cultivation alone will give, and not such as springs up from unassisted nature. We will now suppose that a farmer has a ten acre lot upon his farm, which has run to waste, or for which he has no profitable use. We offer to his consideration, as the most productive employment of this lot, its conversion to a wood lot; and as an inducement for him to attempt it, we state to him the cost of an oak plantation, and its profit and loss for forty years, as follows:

| | |
|---|---|
| Cost of planting, including ploughing, harrowing, manuring and keeping fence or wall in order, at $25 per acre, | $250 00 |
| Thinning, pruning and weeding, for ten years, at $3 *per acre, annually*, | 300 00 |
| Interest for ten years, assuming the land to be worth $15 per acre, | 270 00 |
| Whole cost at the end of ten years, | 820 00 |
| For the next ten years, the thinnings will fully pay for the cutting and other slight attention. We will therefore add to the above, at the end of the 2d ten years, interest upon interest. &c., &c., | 492 00 |
| | $1312 00 |

At the end of twenty years, if the labor which has been charged for, has been faithfully performed, there will remain, say 1000 trees to an acre, of the average height of 30 feet, worth at least 30 cents

| | |
|---|---|
| each, or $300 per acre, | $3000 00 |
| Deduct the cost up to the expiration of this period, | 1312 00 |
| And there remains a profit of | $1688 00 |

after paying interest and expenses.

For the next twenty years, the cost of thinning, which is the only expense, will be more than balanced by the increase in value of the wood cut, at 30 cents per tree, over that valuation. During that time, the trees will have been thinned to about 400 trees per acre, which is about the number of timber trees that can be grown to full size. These trees would be worth for fuel merely, as they stand, at least $5 per tree, any where in Essex County, or $2000 per acre. The account then would stand, at the end of forty years, thus:

| | |
|---|---|
| Profit at the end of 20 years, | 1,688 00 |
| 400 trees per acre, at thd end of 40 years, at $5 per tree, | 20,000 00 |
| | $21,688 00 |
| Less previous value given on same, at 30 cents per tree, remaining, | 1,200 00 |
| | $20,488 00 |

Which sum, large as it may appear, shows the smallest profit to be anticipated from an oak plantation of ten acres, upon suitable land, of a medium quality, at the expiration of forty years from the time of planting.

On a poor dry rocky soil, the Scotch larch would offer as marked a profit. Its wood is almost indestructible, and the rapidity of its growth is astonishing. Though similar to the American larch or hackmatack in appearance, it is totally opposite in habit, the latter flourishing only in wet humid soils, and the former in soils of a dry and gravelly nature. The seed can be imported through Messrs. Hovey & Co., of Boston, or seedling plants can be obtained, at a very low cost, say from one to three dollars per thousand, according to size.

We shall now conclude our remarks with a few directions for preparing the land and making the plantation, taking an oak plantation for an example. The first step is to prepare the ground, by ploughing and harrowing it, as it should be done for corn or potatoes. A light dressing of manure, ashes or lime, should be laid on, and ploughed or harrowed into the soil. This being done, the land is ready to receive the seed, which may be sown as soon as gathered from the trees, or kept in dry sand until spring, if the field is likely to be infested with mice or squirrels. To allow for this and failures in seed, we recommend planting five or six acorns in a circular form, just as one would plant corn or potatoes in hills, making the diameter of the circle at least one foot—the spaces or hills being three or four feet apart; and the work is done, for the present, so far as the future oaks are concerned. It seems to be generally conceded, however, that oaks do better if sheltered by other small trees, set out or sown before the acorns are planted. In England, the Scotch fir, resembling our pitch pine, and the Scotch larch are used. We do not attach quite so much importance to this auxiliary planting, as seems to be given to it in England, though it is of advantage, without doubt, as sheltering the young plants. We think the planter will find great advantage in sowing broadcast the birch seed, at the rate of two quarts to the acre, after ploughing and before harrowing, as it is a quick grower, readily removed, and of value when it becomes necessary to make severe thinnings—and we are satisfied that this is sufficient. If the planter wishes to make a mixed plantation of oaks, pines, birch, ash and maple, he can sow them all broadcast and harrow them in, except the acorn, which, if it is to remain as the principal crop, had better be planted as before directed. We have thus given, in a cursory manner, the most proper mode, in our opinion, to secure a profitable return to the forest planter. We have adopted, out of many plans that planters follow, the one which upon the whole seems best adapted to us, and it has this advantage, if the assertion by some writers be true, that a transplanted tree makes less valuable timber, that the trees start up, grow and mature without transplanting. It may be, however, that a farmer cannot in any one or two seasons get his field ready for planting, and at the same time, he is unwilling to lose the interven-ng time entirely. In such a case, he has only to sow his acorns in a small bed of good soil in the autumn, and allow them to remain

there for one or two years, when he can place them in their future resting-place. In doing so, he can sow them as thickly as he would peas, in quadruple rows, a foot or so apart and an inch deep.

And here it may be well to remark, that great care should be used in selecting not only the acorns of valuable species of oaks, but also from large and vigorous trees. The care used in this respect, will amply repay the trouble. Of the species of oaks to be recommended, of course the white oak stands first, and in good soils it grows rapidly. We wish, however, without excluding any but the red oak, which is useless as a timber tree, to call the attention of our farmers to the Chesnut and Rock Chesnut Oak, the latter of which grows upon the poorer soils. We think these oaks have not received the attention they deserve, both for their beauty, as well as for their value as timber. They resemble more than any of our oaks, the best English oak, and we predict that the time will come, when they will stand side by side, at least in reputation, with the white oak.

In the estimate which we have given of the result of an oak plantation, we are aware that the profit seems too large to comport with our common experience of the value of land covered with wood. But it must be borne in mind, that the land of this nature, which we are in the habit of valuing, is of the natural growth, and most frequently the growth from the stump of a previous forest. We must also recollect that the wood lands which we are accustomed to look upon, have never received care and attention, more especially in thinning at proper intervals. To cultivate a wood plantation successfully, requires the same degree of care and attention in thinning out, as an onion, carrot or beet bed. If the trees are left to struggle with each other for the mastery, the vanquished will die, while the victors will suffer severely from the effects of the struggle. We shall therefore say a few words upon this subject, although we write under a painful sense that we are becoming tedious. The objects to be attained by thinning, is so to regulate the distance of the plants, that they will not interfere with each other's growth; and for this purpose, it is necessary that each plant has sufficient space of ground and air for the spread of its roots and branches, proportionate to its size at any given stage of its growth. To accomplish this properly, requires constant attention. It is highly injurious to thin so much at one time as to leave the trees remaining exposed to a greatly increased degree of heat and cold, as Mr. J. Brown re-

marks, it is like suddenly removing the plantation a few degrees farther north or south. So it is equally injudicious to allow the plants to become crowded and interlaced, as thereby they exclude too much the light and air and serve to weaken each other. In rearing a plantation for timber, the approved rule for hard wood trees is, to have a space between each tree equal to half its height; and for resinous trees, a space equal to one third the height; and this should be kept in view from the moment that thinnings commence. The period when these thinnings should begin must depend upon the forwardness of the trees. If acorns are planted in circles such as we have recommended, they can remain so for two or three years; the weaker ones can then be carefully drawn out, so as not to disturb those that are to remain, until the plants shall stand three or four feet apart. In the course of seven or eight years, the remaining plants should have attained the height of ten or twelve feet, when the first moderate thinning should take place, and ever after, the rule we have laid down should be carefully followed.

We have thus, in as brief manner as in our power, presented our views upon the important, though neglected subject of arboriculture, endeavoring to give them in a practical form, so far as they have gone. We should like to go farther, and to do all in our power to dispel the common illusion that it takes more than one life-time to grow a tree. We can, however, do no more than to present the following table of the actual, as well as comparative growth of a variety of trees from the time of planting, until they had made twenty years' growth. The plantation covered six acres in extent, consisting principally of a swampy meadow upon a gravelly soil.

| | Average feet in height | Average circumference. feet. inch. |
|---|---|---|
| Lombardy Poplar, | 60 to 80 | 4 8 |
| Abele, | 50 to 70 | 4 6 |
| Plane, | 50 to 60 | 3 6 |
| Acacia, | 50 to 60 | 2 4 |
| Elm, | 40 to 60 | 3 6 |
| Chesnut, | 30 to 50 | 2 9 |
| White Pine, | 30 to 50 | 2 5 |
| Spruce, | 30 to 50 | 2 2 |
| Larch, | 50 to 60 | 3 10 |

No account is here given of the oak, but Louden and other

writers give the average of its growth, upon a medium soil, as from 30 to 50 feet, in the same period. The above table is an account of English growth, but it corresponds perfectly with the results of our own observation and experience in Massachusetts. We have quoted this table as an incentive to tree planting. Even if we are indisposed to recreate the forests which have been wasted, we may some of us be induced to adorn the road sides near our dwellings with trees. As they grow in size from year to year, they creep into our hearts' best affections. Our associations become connected with them; our children grow up with them and learn to love them, and our children's children may enjoy their shade and gambol beneath them. Indeed, as compared with the life of man, the trees which he plants soon assumes a superiority over him. From his tender nursing, it springs into existence and becomes his shelter and his protection, and will continue to shelter succeeding generations long after he is gone and forgotten. The tree under which Washington stood, when he first drew his sword to take command of the army at Cambridge, is still vigorous and flourishing as ever, while all of that gallant band of patriots have passed away.

For the Committee,

RICHARD S. FAY, Chairman.

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## ON FRUIT TREES.

The Committee on Fruit Trees have to report that two entries only have been made for premiums. One by S. C. Pitman of Lynn, and one by Wm. G. Lake, of Topsfield, whose statements in relation to their respective Nurseries are annexed. By referring to those statements it will be seen that the entry of Mr. Pitman, is for his whole Nursery, that of Mr. Lake for "three thousand, one hundred and seventy-eight Baldwin apple trees, standing on twenty-three and one quarter square rods of land," being in fact but a small part of an extensive Nursery, on another portion of which he received the first premium of the society last year. The committee feel somewhat embarrassed how to proceed in awarding the premiums in this case. They are awarded for the "best Nursery of trees;" under this, can any thing less than the whole Nursery be offered? If

so, how is it possible to make a comparison of a selected part of one Nursery with the whole of another? Had there not been a difference of practice heretofore, which has given a different practical construction, it would seem as if nothing less than an entire Nursery could be offered for premium. In the course of our visits to the other Nurseries, we have found that the reason why no other entries were made, was, on account of the unwillingness of those possessing large Nurseries to come into competition—not with smaller ones—but with select portions of other Nurseries.

The Committee were much pleased with the appearance of Mr. Lake's trees, showing a vigorous, healthy growth, with the exception of the leaf not being entirely free from lice. Mr. Pitman's trees, especially his apples and pears, were likewise remarkably healthy and vigorous, the leaf fresh and green, showing, we think, in a very favorable light, the permanent advantage of bone manure, in the cultivation of young trees. If our old orchards could receive a little attention by cleaning and manuring with ashes and bone, or with either, we believe they would amply repay the trouble and expense of the application. Many of our farmers have yet to learn that it is much cheaper and easier to renovate an old orchard, introducing by grafting, all new and valuable varieties of fruit, than to make a new one by planting young trees, and it is to be hoped, now that apples are becoming a large article of export, that more attention will be given to this matter. There is hardly an old apple tree in Essex county, that might not be resuscitated and brought into full bearing in four years, by a little labor and expense.

In conclusion, the Committee would recommend that the first premium be awarded to Samuel C. Pitman, and that for the reasons before suggested, no other premiums be awarded.

For the Committee,

R. S. FAY, Chairman.

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SAMUEL C. PITMAN'S STATEMENT.

*To the Committee on Fruit Trees:*

GENTLEMEN,—The trees in my nursery, to which I would call your particular attention, are some five thousand apple, in one lot,

two years from the seed and one from the bud, consisting of nearly equal parts of the following varieties:—Baldwin, R. I. Greening, Northern Spy, Porter, William's Favorite, Epes' Sweeting and Fall Harvest. They have made a straight and average growth of nearly four feet—very few of the buds having failed.

Also, about three thousand apple, two and three years from the bud, consisting of the following varieties:—Gravenstein, Porter, Kilham Hill, Fall Pippin, Baldwin, R. I. Greening, &c.

Also, about three thousand pear trees, two years from the seed and one from the bud, consisting of Louis Bon de Jersey, Bartlett, Flemish Beauty, Nopoleon, &c.

My land is mostly a gravelly loam, manured four years ago with crushed bone, at the rate of twenty-five bushels to the acre, with a slight dressing of barn yard manure, when the trees were set in the rows. The growth of my trees have not been extraordinary, but uniform and healthy.

Respectfully yours,

SAMUEL C. PITMAN.

Upper Swampscot, Lynn, September 29th, 1848.

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WM. G. LAKE'S STATEMENT.

*To the Committee on Fruit Trees:*

Gentlemen,—I offer for the Society premium three thousand one hundred and seventy-eight Baldwin apple trees, standing on twenty-three and one quarter square rods of land. These trees are two years old from the seed, and one only from the bud. The heighth will average from $3\frac{1}{2}$ to 4 feet, this being the entire growth of this season.

The land on which these trees stand, was prepared in the following manner, viz.:—In the year 1844, it was broken up, and planted with potatoes, it then being well manured. In 1845, a crop of seedling pear and apple trees. was raised. In 1846, the trees were set in nurseries in rows, when one year old. In 1847, they were budded, being two years old from the seed. There has been no manure applied to this land since the potatoes were planted in 1844, except

less than one cord of compost manure, composed of three parts sea weed and one part stable manure, spread between the rows.

Yours respectfully,

WM. G. LAKE.

Topsfield, Sept 27, 1848.

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## ON GRAIN CROPS.

The Committee on Grain Crops have attended to that duty, and REPORT:

That only one entry has been made for raising Grain, and that by Mr. John Hathaway, of Danvers, for a crop of winter rye, of an extraordiuary yield. Mr. Hathaway's statement is very full as to his manner of manuring, preparing and cultivating his lands for the previous crops, and also for the present crop of winter rye. It will be seen that he has raised on one and a quarter of an acre of land 55 bushels, equal to 44 bushels to the acre. This is the largest crop of rye, to the acre, that has come within the knowledge of the Committee.

As Mr. Hathaway has spared no pains in preparing his land for a good crop, the Committee are happy to find that he has been amply paid for his labor by reaping an abundant harvest, and recommend the premium of eight dollars be paid to him for his crop of winter rye.

His crop of summer rye is also a very large yield, 45 bushels on one and a half acres of land, which would entitle him to a premium. As, however, but one premium is offered by the Society, they cannot recommend any for this crop.

The Committee would recommend that farmers give more attention to the raising of this grain; it not only gives a large yield of grain, but the straw is valuable, generally about 100 lbs. to one bushel of rye, and will always command a high price and ready market. Another advantage is, that being sown in the autumn, after other crops are taken from the land, grass seed may be sown at the same time, and it is the opinion of the Committee that it is the best grain with which to lay down land to grass.

The Committee regret that no other crops of grain have been en-

tered for a premium. One piece of oats, of a very large yield, came within the observation of the Committee, but was not duly entered.

Respectfully submitted,

JAMES STEVENS, Chairman.

Salem, November 16, 1848.

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JOHN HATHAWAY'S STATEMENT

*To the Committee on Grain Crops:*

GENTLEMEN,—I present for your consideration a crop of winter rye, raised on the town farm in Danvers, on a field containing about one and a quarter acres of land. This land is a light loam, some part of it gravelly. In 1845, the field yielded one small load of hay. In 1846, it was ploughed, planted with corn, and yielded a good crop, say from 50 to 60 bushels to the acre. The manure used was such as is made in our hog-pen from meadow mud and slaughter-house offal. We put a full shovel full to the hill. In 1847, we spread about five cords of like manure upon the land, and planted the lot with potatoes. We used four oxen and a large plough, and ploughed at least eight inches deep. The crop of potatoes was large and of very good quality. Before the 20th of September, we dug them. We then ploughed with four oxen. as before, harrowed it, then sowed 1⅝ths bushels of rye, and harrowed it in. This was done on the 25th of September. The crop advanced through the season in a most promising manner, and was harvested about the middle of July in the best possible condition. We obtained from this field 55 bushels of sound grain. We also raised on another lot, of one and a half acres, forty-five bushels of spring rye.

It will be remembered, that the soil of this farm is of ordinary quality, compared with the soil on most other farms in town. The improvements on it have been chiefly owing to the increase and application of manure.

JOHN HATHAWAY.

Danvers, August 31, 1848.

I certify that I have measured the land on which grew the winter

rye above described, and found it to contain one and a quarter acres. I also saw the grain and consider it of superior quality.

JOHN W. PROCTOR.

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## ON ROOT CROPS.

The Society offered 36 dollars, in the aggregate, for the "best conducted experiment" in raising the following roots, viz.: Sugar Beets, Carrots, Parsnips, Ruta Baga, Mangel Wurtzel and Onions. No entries were made on any of the above roots, except onions.

There were two entries for the premium on onions; one by Aaron C. Proctor, of Danvers, who raised 480 bushels to the acre, which was not much above the ordinary yield.

The other entry was by John Peaslee, also of Danvers. It appears by his certificate that he raised on one half acre 411 bushels, being at the rate of 822 bushels per acre, which the Committee considered a yield entirely unparallelled in the history of the onion crop.

The Committee recommend that the Society's premium of six dollars be awarded to John Peaslee, for his successful cultivation of onions.

The Committee regret that there was no entry of claims on the other roots for which premium were offered, as each of them is of the greatest importance to every farmer for feeding his stock.

JOHN STONE, JR. Chairman.

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### JOHN PEASLEE'S STATEMENT.

*To the Committee on Root Crops:*

GENTLEMEN,—I offer for premium a crop of onions raised from one half acre of land, measuring four hundred and eleven bushels. Land worth two hundred dollars per acre; yellow loam, Southern descent. A crop of onions was taken from the land the year previous; not so good, however, as those of the present year. The manure used was well rotted stable manure, which cost four dollars per cord. The land was ploughed to a depth sufficient to bury the dressing. About the middle of April of the present year, the land

was manured, ploughed, and prepared as usual, and one pound and a half of seed sown. The usual method of hoeing with a machine, and weeding by hand was pursued. The crop was harvested about the last of the month of September, and carefully measured in a bushel basket. Annexed is a statement of the expenses of the crop, as nearly as can be ascertained :

STATEMENT OF EXPENSES.

| | |
|---|---|
| Three cords of manure, at $4 per cord, | $12 00 |
| One and a half pounds of seed, at $2 per lb. | 3 00 |
| Remaining expenses, | 10 00 |
| Whole amount, | $25 00 |

JOHN PEASLEE.

Danvers, November 15th, 1848.

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AARON C. PROCTOR'S STATEMENT.

*To the Committee on Root Culture :*

GENTLEMEN,--Having called your attention the last year, to my cultivation of *onions*, and stated the facts in relation thereto, as they had then come to my knowledge, I now submit the following as my experience the present season. I continued the cultivation on the same ground. I used similar manures, in all, about six cords to an acre, ploughed and harrowed thoroughly; cleared away all refuse material; and sowed the seed as early in the spring as the land could be prepared. I was particular to keep down the weeds. I found the plants thinner than I intended they should be, and was apprehensive that the crop would fall short, on this account. The season has not been favorable for the growth of this plant, though mine continued to flourish and grow longer than many other lots that I noticed. Perhaps this was owing to their being thin. They obtained a good size, and were of as fair quality as I ever raised. I obtained from one acre of the ground four hundred and eighty bushels, as measured and delivered in the market. The value at the time I sold them was $1 33 a barrel; they have since commanded a higher price.

One fact I noticed this and the last year, where my onions grew, may be worthy of remark, as illustrating the effects of *subsoil plough-*

*ing.* Three years since, about half of the plane land, where the onions grew, was subsoiled eight inches below the ordinary ploughing; the other half was not. In all other respects, the land was manured and treated alike. The crop was decidedly better on the part that was subsoiled, than on the part that was not. I am not able to state with precision how much better, but should judge it to be from *fifteen to twenty per cent.* At the time I used the subsoil plough, it was the better to prepare the land for a crop of carrots, without any expectation of a beneficial influence upon the onions. I state the facts as observed, and presume the improved crop was the consequence of the subsoil ploughing. I have not used a plough of this description sufficiently, to speak with confidence of its general utility; but from what I have witnessed, cannot doubt it may be used on some kinds of soil to great advantage.

One other fact I observed on my field of onions, which may be worth mentioning. When I procured the muscle bed, a part of it I spread directly upon the land, and a part I distributed in heaps, and after it laid through the winter, caused it to be spread. Where these heaps laid, could be distinctly seen through the season, and the crop was much less, than around them. Possibly, too much salt had mingled with the soil; whatever may have been the cause, the effect was prejudicial. The extraordinary crop of onions the last year induced many to engage in the cultivation the present. Many fields have fallen short of expectation nearly one half. My own has done well. Though had the season been a favorable one, I cannot doubt that the crop would have been one quarter part more. The demand for the onion has thus far been commensurate with the supply; and I see no reason to hesitate in the belief, that it will continue to be one of the most advantageous crops that can be cultivated.

AARON C. PROCTOR.

Danvers, October, 1848.

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## ON COMPARATIVE VALUE OF CROPS, &c.

The Committee on the "comparative value of crops as food for cattle," regret that it is not in their power to award the liberal premiums offered. These offers have been before the public for several

years, without awakening that attention in the minds of cultivators their importance demands. When we take into view the fact, that so large a portion of the time of the farmer, both in summer and winter, is occupied in securing or distributing the food of his cattle; it cannot be otherwise than a matter of deep interest, to regulate this labor to the best advantage. If therefore, by any suggestions in our power to offer, valuable information may be elicited or disseminated, we shall, in part at least, have discharged our duty. If we can be so fortunate, as to induce any one to undertake a series of accurate experiments, to test the truth or fallacy of our conjectures, an important point will be gained. We are fully sensible that facts, derived from a continued series of observations are wanting on this subject. We are surprized that those most interested in these matters should be willing to remain so imperfectly informed, as are a large proportion of the farming community.

*English Hay* is proposed as the test of the comparative value of the other articles used. This is so generally used, so valuable, and of so uniform a character that it may well have this distinction. Tabular statements, from time to time, have been published, varying with the experience of those who framed them, giving general views, approximating without doubt to correctness. One of this kind can be found in the Report of the Commissioner of Patents for 1843, page 120, from which an abstract was taken in our Transactions for 1844, page 33. But we are not quite satisfied, for instance, with being informed that 275 pounds of green stalks of Indian corn are equal to 100 lbs of hay, or that $2\frac{3}{4}$ pounds of green corn fodder, equals one pound of hay. We want to know something further about it. We want to know, for example, how this kind of feed will operate on a stock of milch cows, by increasing the quantity or improving the quality of their milk. In the vicinity of a dense population, the supplying the market with milk is one of the best applications of the produce of the farm. Many expedients are adopted, to furnish food, when the ordinary supplies are cut off; as when the pasture lands are parched with drought, in August and September. Perhaps no one auxiliary has come into more general use, than green corn stalks, cultivated for this purpose, after the crop of grass has been gathered. Why is this done? Has any one made certain the fact, by experiment, that this kind of feed does actually increase the quantity of milk, to any considerable extent?

The experience of some of the Committee in distributing several tons of this kind of fodder to a flock of thirty or forty cows, *daily*, for several successive years, during the season of its production, has left great doubts of its value; especially in increasing the quantity of milk. This crop is abundant and very easily grown. It is readily and greedily devoured by the animal. It may be used advantageously to save the pastures from being too closely fed. But if the produce of the animals is not essentially increased by the feed, then the labor of growing, gathering and distributing, is in a great measure lost. We will not presume to speak positively, for we have not made those careful observations necessary to warrant this; but so far as we have observed, in superintending one of the largest milk farms in the vicinity of Salem, (the Pickman farm, so called) our impressions are that much less benefit is derived from this kind of feed, than is usually ascribed to it. Some benefit may accrue from the cultivation of corn in this manner, by the aid it affords in pulverizing the soil, and better fitting it for the crop the ensuing season; especially if a dressing of manure is applied at the time of planting, and well harrowed in. Vigilant attention will thus enable the tenant of a few acres, to realize two crops, where but one ordinarily grows.

In expressing a quere as to the expediency of cultivating Indian corn, to be used *green*, for the soiling or feeding of cattle, it is done more to awaken attention to the subject, than because of confidence in our present impressions. We are aware of the recommendations that have been given to this crop, in our own publications, and by those whose opinions we regard as of the highest authority. To be consistent, therefore, it is proper to advert to these, until the question shall be definitely settled by well conducted experiments. In remarks upon premiums offered for soiling in 1823, Col. Pickering observes, that "Indian corn will be well grown for soiling by the middle of July, and will continue green and in full sap until the last of August. In order to continue a supply of this rich green food, to which probably no other vegetable of our country is equal, especially for milch cows, pieces of land may be planted in succession, so that some may be in full sap to the last of September." The same distinguished practical observer remarks, in the last communication he made to the Society, Sept. 25, 1828:

"The great value of Indian corn stalks, in their green state, for feeding cattle, milch cows especially, I have before mentioned," al-

luding unquestionably to the quotation before made. "That which is planted early, for this use, will be ready for cutting just when, in our common summers, the pastures begin to fail." "To have this fodder, through the season, in its green and most juicy state, it should be planted at different times; so that the latest planted, should attain its proper growth by the middle of September, and continue till the frosts appear, usually about the first of October." The observations of Mr. Ware and others, who have cultivated and used this vegetable to such an extent, for several years, is the basis on which our queries as to its superior value are founded. We consider this one of the most interesting subjects for further experiments now open to cultivators; and hope by the remarks we have made to awaken attention to the same. Nothing can be lost by such experiments; they bring with them their own reward. The products are sure to yield a liberal indemnity, for all investments, either of labor or of dressing with manure.

*Carrots* and *Beets* are cultivated to some extent to help out the feed of our animals. Is there any one of our farmers who can answer with confidence, which of these is most worthy of cultivation? Satisfactory experiments to determine this would be of great value. We have used them both, to some extent, and will state such impressions as have arisen from this use. We have found the *sugar beet* one of the very best vegetables for the production of milk; far superior to the *carrot*—which is thought by some to be the very best of feed for milch cows. We have found the carrot better for fattening than for increasing the milk of animals. We speak of the sugar beet, in preference to the blood beet, because it grows more abundantly. There are other considerations to be taken into view, in determining which of these vegetables is most worthy of cultivation, as well as the effect on the animals fed by them. We have found the carrot to yield the most, and to leave the land in the best condition, especially for the succeeding crop. Almost all other crops will grow well after the carrot; few will grow well after the beet. The carrot will grow well successively, year after year; the beet will not. The carrot requires less manure than the beet. What kind of crop, therefore, it will be most judicious to plant, will depend upon the combined consideration of the quality of the article grown; the labor and expense of growing; and the contemplated future use of the land. In our remarks upon the comparative cultivation of the beet

and carrot, we do not intend to speak with that confidence, which should be a rule for others; all we intend is, to induce others, if possible, to make such observations, as will relieve them from the uncertainty under which we labor. So far as our observation has extended, the cultivation of these vegetables has been diminishing, as a food for animals, of late. But whether this is because of the labor incident to the cultivation, or because the animals can otherwise be more advantageously fed, we are unable to say. Did the growers of these plants rightly understand their own interests, they would find that while they are gathering up facts to enable them successfully to sustain a claim for the premiums offered, they are acquiring that kind of information which will enable them ever afterwards to proceed in their cultivation with confidence.

*Ruta Baga*, *English Turnips*, *Parsnips* and *Potatoes* have each been cultivated as food for animals; and each had their admirers and advocates, especially the potato. We remember when it was thought the potato would supersede the use of most other crops. That it was the very best of feed for fattening and milking purposes. But the glory of the potato has departed, at least until the nature of the malady that now affects it can be discovered; it being difficult to secure enough for the use of man,—not to speak of beasts. We have heard extravagant enconiums on the turnip, particularly the *Ruta Baga;* and seen crops beautiful and abundant. When it was first introduced, it was cried up as the one thing needful, to the farmer. Is there any one ready to endorse this opinion, at this time?

Of the *Parsnip*, as a food for animals, we can only speak theoretically, not having known this vegetable to have been cultivated or used for this purpose, to any considerable extent. Why it has not been we are unable to determine. Judging from its growth as a garden vegetable, it may be grown with equal ease and abundance as the beet or carrot; and we should presume its nutritive qualities were not inferior to either of these. We speak of it, not to recommend it any farther, than as a fair subject for experiment.

A review of the opinions that have prevailed, in relation to the cultivation of vegetables for the use of animals, should make us cautious in our preference, and more discriminating and observing of all the circumstances, that may have a bearing upon the result. This is the kind of information sought to be elicited by the premiums of-

fered. For this reason do we make these commentaries, in the hope of drawing out this information. We feel that it is what the farmer ought to know, and what, it is in his power to know, if he will but take the requisite pains to acquire the knowledge.

*Indian Corn* has long been a cherished and valued crop in New England. No other crop has as yet been found, that will in all respects fill its place. Others yielding a more bountiful harvest to the acre, can be named; but where is the farmer, relying on his own experience, who wants to have his oxen in good condition for the butcher's stall in the spring, who would be willing to trust them without the use of a portion of Indian meal? or where is the farmer who has not found a few quarts of Indian meal to be beneficially distributed to his cows, about the time of their lying in? These are notions we acquired when young, among old school farmers; and, although we have never gone into a nice calculation of the economy of growing Indian Corn, we believe it will be a long time before Yankee farmers will be persuaded to abandon its cultivation. Certainly not, while children love *Johnny cakes* as we used to love them. Our impressions are, that a mixture of feed is preferable to any one kind exclusively. English hay should be the basis, and Indian Corn the first accompaniment. All the vegetables named may be advantageously used, when combined with Indian meal. No stock can be fed, in the most successful manner, without a fair portion of this indispensable ingredient. It is to the animal, what steam power is to the traveller, the most certain means of going ahead.

Some farmers are of the opinion, that the fodder procured from the corn field, will nearly pay for the labor of growing and gathering the crop. If this be so, and an average of *fifty bushels* to the acre can be secured by fair manuring of the land, the farmer who cultivates ten acres of corn, will find it a very pretty appendage to his crops, at the close of the harvest.

Whatever may be the kind of food used for the feeding of cattle, of this we feel confident, that it should not be sparingly used. Feed full, or not at all is our motto. It is the worst possible economy to scrimp the feed of cattle, or to attempt to impose upon them a kind of food of ordinary or mean quality. How much time is annually wasted in gathering in the coarser grasses from the meadows and forcing them down the gullets of animals, when their knees have hardly strength sufficient to support their emaciated bodies. If such

kind of feed is to be used at all, it should be chopped and mixed with something nutritive, so that the animal may strengthen and thrive thereby. He that withholds from his beasts any portion of a full and generous feed, whatever may be the use he contemplates to make of them, in the same proportion diminishes his own income.

J. W. PROCTOR,
H. WARE, Jr. } Committee.
JOSEPH HOW.

November 15, 1848.

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## ON THE DAIRY.

The Committee on the Dairy make the following REPORT:

There were but four entries of butter for premium the present year, and one of these not coming within the rules of the Society, your Committee did not feel themselves at liberty to award to it any one of the premiums at their disposal, although the butter was of very fair quality, and would have received the favorable notice of the Committee, had the rules of the Society been observed. Your Committee therefore recommend that premiums be awarded as follows, viz.:

For June butter, the first premium of ten dollars, to Charles P. Preston, of Danvers. The second premium of eight dollars, to Benjamin Boynton, of Andover.

For September butter, the first premium of ten dollars to Nathaniel Felton, of Danvers, the second premium of eight dollars, to Charles P. Preston, of Danvers, and the third premium of six dollars, to Benjamin Boynton, of Andover.

There was also presented to the notice of the Committee, a very fine specimen of new milk cheese, by William Marshall, of Essex, three offered as a sample of 100 cheeses, made the past season, weighing in the aggregate 3000 lbs. There being no premium for cheese offered by the Society the present year, your Committee recommend a gratuity of eight dollars.

Respectfully submitted for the Committee,

LEWIS ALLEN.

CHARLES P. PRESTON'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—I present for your inspection one pot of June butter, containing twenty-nine lbs., being a specimen of two hundred and eighty-nine lbs. made between the 1st of June and 9th of July, from the milk of seven cows and a two year old heifer.

Also, two boxes of September butter, containing 29 lbs. being a sample of 793 lbs. made between the 20th of May and the 27th of September, from the same cows.

Their feed has been common pasture, until the 5th of August; since that time, green corn fodder once a day.

*Process of making.*—The milk is strained into tin pans, and placed in a cool cellar, where it stands from thirty-six to forty-eight hours, according to the weather. It is then skimmed, and the cream is put into stone jars and set in a vault made for that purpose Churn once a week. The butter milk is worked out thoroughly, and the butter is salted by an ounce of ground rock salt to the lb.

CHARLES P. PRESTON.

Danvers, September 27, 1848.

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BENJAMIN BOYNTON'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—I present as a specimen of June butter, a jar of 28 lbs., being a sample of 117 lbs. of the same month. This butter was made from the milk of four (native breed) cows; their feed in winter being corn fodder, straw and meadow hay, the forepart of the winter, and four weeks before they come in, a mixture of English and meadow, and after they come in, English hay only; in summer, pasturing only.

*Process of making.*—The milk is strained into tin pans, and stands about forty-eight hours. The cream is then taken off and put into a tin cream pail and kept until it is ready to be churned, which is twice a week; and after the butter has come, it is salted with 7 ounces of salt to 8 lbs. of butter, and worked over twice when it is ready for use. We use the dash churn.

Also, a jar of September butter. The process of making, the

same as the June butter. Since June, we have made 313 lbs. butter and 190 lbs. four meal cheese. Since August 10th, we have fed our cows on fodder corn.

We have an ice cellar, and since July, we have had ice in our milk cellar more or less, which has kept it about the temperature of 62 degrees. This keeps the milk a greater length of time. Twelve hours before churning, we set our cream pail on ice, to cool the cream, which always produces hard butter.

Yours respectfully,

BENJAMIN BOYNTON.

Andover, September 26, 1848.

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NATHANIEL FELTON'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—I offer for your inspection three boxes of September butter, containing 27 lbs., being a sample of 768 lbs. made between the 20th of May and the 20th of September. I milked seven cows till the 10th of August, since then, 8. The feed was common pasturing till the middle of August; after that, they had cornstalks once a day, till the first of September; since then, twice a day. We have used milk for nine in the family, and sold two gallons a week.

*Process of making.*—The milk is strained into tin pans; it stands from thirty-six to forty-eight hours in a cool cellar, when the cream is taken off, put into tin pails and stirred every day. We churn once a week; during the warmest weather, the cream is placed in the well about twelve hours before churning. After it is churned, the buttermilk is thoroughly worked out, and the butter is salted to the taste, (about an ounce to a pound.) After standing about an hour, it is again worked and weighed, each pound separately.

NATHANIEL FELTON.

Danvers, September 27, 1848.

WILLIAM MARSHALL'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN,—I offer for premium a specimen (about 100 lbs.) of new milk cheese, made upon my farm at Hog Island, in the town of Essex. I have had the milk of fifteen cows through the season. We began to make new milk cheese exclusively, (or nearly so) about the middle of May last, and with the exception of a few days, have made one cheese a day, of about 30 pounds weight, up to the 3d of September. The whole number is 101, and the whole weight, about 3000 lbs.

Our method has been, to take the cream off of the night's milk, every morning, then to warm the milk, and when brought to the temperature of new milk, to put all the cream into it again, and add the morning's milk, while warm. Our reason for not warming the cream, is to avoid the oily appearance which it always takes on being warmed. The milk at night is strained into tubs, which saves the trouble and expense of milk pans. I never put coloring matter of any kind into the cheese or upon the outside. A cotton cloth is sewed round every cheese, on taking it from the press. We keep them in the press forty-eight hours, during which time they are turned twice. After going on to the shelves, they are turned every day, and rubbed with fat of some kind. We use the fine salt that usually comes in bags of about 25 lbs. each, and put a pint wine measure, into every cheese of 30 pounds weight. The quantity of rennet is always such as to have the curd form and be ready to break up in about three quarters of an hour after it is put in. The rennet is allowed to soak about twenty-four hours before use. We find that one fourth part more rennet is necessary for new milk cheese than for other cheese. We use the common lever press.

The cows have a change of feed by going about two weeks in each pasture, They have had no fall feed, no roots or meal, nothing but pasture grass.

WILLIAM MARSHALL.

Essex, September 27, 1848.

## ON FATTENING CATTLE AND SWINE.

There has been no application for premium, the present year, for fattening cattle or swine. In the County of Essex, there is but little stock raised and fattened expressly for the butcher, as it is not considered profitable. Considerable stock must necessarily be fattened; old cattle must be turned off and young ones take their places. Some farmers have made it profitable by purchasing cattle in the spring, putting them into a good pasture, and selling them to the butcher in the latter part of summer, or early in autumn, before the droves come in from the country, as they then command a higher price than later in the season. But this cannot be done successfully, unless the pastures are very good, which is not generally the case. Cattle should always be kept in good flesh for several reasons. Cows will give more milk, and of better quality. Oxen will perform more labor. Should a leg be broken, or some other accident happen, they will not be a total loss. Or, should beef be unusually high, they can easily be prepared for the butcher. Besides, it is much pleasanter seeing the stalls filled with fat, smooth cattle, than those like Pharaoh's lean kine. And that cattle may be kept in good flesh, pastures should not be overstocked, and when the feed grows short, as it usually does in the latter part of summer and autumn, they should be fed on green corn or something else raised for the purpose.

Much attention should be paid to feeding cattle in the winter. They should also be well watered and kept warm. It is better to keep them in the barn for the most part of the time, in extreme cold weather, than to leave them out shivering behind the fence.

If they are designed for beef in the spring, and are as fleshy in the fall as they should be, by giving them a few roots or a little meal, with good hay and careful attention, they can be made good beef. A few years ago, I commenced raising ruta baga and beets for fattening cattle. I had good success, and considered them a profitable crop. Soon, however, they began to depreciate; the ruta baga rotted in the field; now I consider them an uncertain crop and have discontinued to cultivate them. I am also of the opinion that the profit of fattening cattle in winter is rather small, especially to those farmers who have a market near for their hay.

In regard to fattening swine, as the potato crop has failed, I know of nothing better than corn meal; although apples, roots and vegeta-

bles may be used in the summer and fall to some extent. Swine should be kept well, and the sooner they are fattened the better. A pig that will weigh 300 pounds when ten months old, is more profitable, than if kept until it is fifteen months old, to weigh the same. That swine may thrive well, they should be fed regularly. I mean about the same time every day. When the time arrives that they are usually fed, they will be squealing at the trough; or if they are of more quiet disposition, they will be looking with intense anxiety for their usual repast. Remaining in this situation, they will not thrive so well as when they are regularly fed, and return quietly to their nest. They should also have a warm place to eat and sleep. Although they like to wallow in the mire, still they like a warm bed. The question is often asked, is it profitable to raise pork? or how the price of pork should compare with corn, that the pork may pay for the feed, and the manure for the trouble?

In about one year, I raised about 5000 pounds of pork, and kept an account of what the swine eat. They were kept mostly on corn meal, with some apples and potatoes in the fall. The food was mostly cooked. Reckoning the corn at 75 cents per bushel, the potatoes, apples, and what they received from the dairy, at what I supposed they were worth when compared with corn, the pork cost about seven and a half cents per pound, offsetting the manure against the labor. The swine were of a good kind, and did well.

In regard to cooking meal for swine, there are different opinions. I tried an experiment in 1841, which was published in the Transactions of the Society for that year. The result was in favor of uncooked meal. But as many farmers have a different opinion, I wish further experiments might be made upon the subject.

Since making the above statements, a communication has been received from Francis Dodge, of Danvers, the object of which is to show the expense of raising pork. The Committee consider it not to come within the rules of the Society for premium, but recommend that five dollars, as a gratuity, be paid Mr. Dodge for the information he has submitted.

JOSEPH HOW, Chairman.

Salem, November 17, 1848.

## FRANCIS DODGE'S STATEMENT.

*To the Committee on Fattening Cattle and Swine:*

GENTLEMEN,—Believing it might be of some advantage to the farmers of Essex County to know the actual cost of fattening swine, I herewith submit an account of the cost and keeping of seven. They were bought from a drove on the 24th of April, 1848. Their whole weight at that time was 925 lbs., for which seven cents per lb. was paid. Their respective weights were as follows:

| | Wght when bought. | Time when killed. | Wght when killed. | Net gain. | Days kept. |
|---|---|---|---|---|---|
| No. 1 | 110 | Sept. 25 | 253 | 143 | 154 |
| " 2 | 140 | Oct. 17 | 283 | 143 | 176 |
| " 3 | 130 | " 17 | 334 | 204 | 176 |
| " 4 | 131 | Nov. 6 | 281 | 150 | 196 |
| " 5 | 116 | Nov. 6 | 314 | 198 | 196 |
| " 6 | 146 | Nov. 8 | 339 | 193 | 198 |
| " 7 | 152 | Nov. 8 | 374 | 222 | 198 |
| | 925 | | 2178 | 1253 | 1294 |

The cost of food was as follows:

| | |
|---|---|
| 68 bushels of Corn, at 53 cts., | $36 04 |
| 30 " damaged do., at 35 cts., | 10 50 |
| 50 " Corn, at 65 cts., | 32 50 |
| 8 " Meal at 65 cts., | 5 20 |
| | $84 24 |
| Add cost of pigs, | 64 75 |
| Total cost, | $148 99 |

We have then the cost of pigs, amounting to one hundred forty eight dollars ninety-nine cents against 2178 lbs. of pork, at 6½ cents per lb., (at which price it was sold) amounting to one hundred forty one dollars, fifty-seven cents, leaving a balance against the pigs of seven dollars and forty-two cents. These pigs were fed three times a day on meal and water, and properly cared for in every respect; and in similar circumstances it is but fair to expect the same results, and shall we from these results conclude that pork cannot be fattened in Essex County without loss? I think it cannot, when the farmer purchases his pigs in the spring at a high price, and his corn at any price, though it may be the lowest market price, looking en-

tirely for his return to the market value of his hogs. But there is another return, in the shape of manure, that will repay him for all the trouble he has, and richly too, if proper care has been taken to throw them occasionally a load of mud, soil, or something of the kind, which they convert into the best and richest of manures. I am convinced, that it would be better and more profitable for the farmer to raise his own pigs, and not give the profit to the drover. Certainly if he cannot afford to fatten and sell pork at 6½ cents per lb., he cannot afford to buy pigs alive for 7 cents per lb.

FRANCIS DODGE.

Danvers, November 13, 1848.

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## ON FAT CATTLE.

The Committee on Fat Cattle have attended to the duty assigned them, and submit the following REPORT:

There were entered for premium two pair of oxen, two odd oxen, and two cows, and we recommend that there be paid to

| | | |
|---|---|---|
| Perley Goodale, of Danvers, for one pair of oxen, | 1st prem. | $15 00 |
| Nathaniel Felton, " " " | gratuity | 6 00 |
| David S. Caldwell, of Byfield, one odd ox, | 1st prem. | 10 00 |
| Jedediah H. Barker, of Andover, one odd ox, | 2d prem. | 8 00 |
| Jedediah Farnham, " one cow, | 1st prem. | 8 00 |
| John C. Dennis, of Marblehead, " | gratuity | 2 00 |

WINGATE MERRILL,
GREEN PAGE,
RICHARD TENNEY,
WILLIAM FRIEND,
JOHN D. CROSS. } Committee.

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## ON SWINE.

The Committee on Swine, report that the following entries for premiums received the attention of the Committee, viz:

One from Joseph Horton, of Ipswich, of a breeding sow, and six weaned pigs four months old.

One from Samuel C. Pitman, of Lynn, of four pigs five and a half months old, Leicestershire breed.

One from Samuel Hawkes, of Saugus, of two pigs three months old.

One from John Alley, 3d, of Lynn, of a breeding sow and nine weaned pigs nearly six months old.

One from Richard Adams, of Newbury, of a boar six months old.

One from Horace Ware, Jr., of Salem, of a boar one year old.

The pigs of Mr. Horton, of Ipswich, were large of the age. Their legs and noses too long and their bodies too long for the thickness.

The pigs of Samuel C. Pitman, of Lynn, of the Leicestershire breed, partook somewhat of the above properties, which the Committee consider a failing, especially if designed for slaughtering young.

No statement accompanied the entry of this lot, and no one was at hand to inform the Committee how they had been fed. They may be a valuable breed of hogs.

The two pigs of Samuel Hawkes, of Saugus, were not subject to the objections intimated as existing in the two former described lots. They were very perfect models of the short thick compact breed of swine, and would in former times rank as the Byfield breed.

The lot of John Alley, 3d, of Lynn, were in high condition. The sow was very fat, and the pigs with I think two exceptions, (caused by disease,) fine thrifty animals. We understand by Mr. Alley that the sow, as well as the pigs, were designed for slaughter this autumn.

The boar of Richard Adams, of Newbury, is said by him to be from a Byfield sow, and a Suffolk Boar of William Bartlett, of Newburyport. From the appearance of the boar we consider the above a first rate cross, he being a very perfect animal of his kind.

The boar of Horace Ware, Jr. of Salem, was not accompanied with any statement of his breed, or the manner of his feeding, but simply his age, being one year. The Committee consider him a fair animal, and nothing more.

For weaned pigs, the Committee recommend that the first premium of $6 be awarded to John Alley, 3d, of Lynn. And if in the opinion of the Trustees, a premium for a breeding sow should be awarded for one intended for immediate slaughter, then we award to him the first premium of $5 for his breeding sow.

The second premium for weaned pigs of $3, we award to Joseph Horton, of Ipswich.

We award to Richard Adams, of Newbury, the first premium of $5, for his boar, and to Horace Ware, Jr., of Salem, the second premium of $3.

We also award to Samuel Hawkes the first premium of $4 for his white pig, under that rule of the Society offering a premium for a less number than four.

MOSES NEWELL, Chairman.

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## ON COLTS.

The Committee on Colts, REPORT:

A larger number of horses were entered for premium, the present year, than usual, and the exhibition spoke well for the good taste and care of our farmers in this valuable and important department of their stock.

There were fifteen colts entered for the inspection of the Committee; although the number was large, there were but few among them which do not deserve a favorable notice.

The Committee award the premiums and gratuities as follows, viz.:

To Josiah Crosby, of Andover, for his four year old colt, the first premium of $10 00

Jo Jacob Farnum, of Andover, for his three year old colt, the second premium of 8 00

To Richard Dodge, of Wenham, for his two year old colt, the third premium of 6 00

To John G. Walcott, of Danvers, for his one year old colt, the fourth premium of 4 00

To Elnathan Dodge, of Beverly, for his three year old colt, a gratuity of 2 00

To Richard Hawkes, of Saugus, for his three year old colt, a gratuity of 2 00

To Joseph Kittredge, of Andover, for his two year old colt, a gratuity of 3 00

To John Danforth, of Lynnfield, for his one year old colt, a gratuity of 2 00

ANDREWS BREED, Chairman.

Lynn, September 28, 1848.

## ON SHEEP.

The Committee on Sheep beg leave to REPORT:

That two entries have been made, one by Elijah Pope, of Danvers, of four sheep and five lambs, of native breed, and a lot of one sheep, with her four lambs at the same birth, of the Cape of Good Hope breed, by Jesse Sheldon, of Beverly.

Mr. Pope's sheep are of good size and well fleeced, and although there is nothing very superior about them, still as your Committee believe that the keeping of sheep ought to be encouraged, and that on any ordinary farm in the County a small lot of sheep may be kept with little or no detriment to the other stock, they recommend that a premium of five dollars be awarded to Mr. Pope. and of four dollars to Mr. Sheldon.

For the Committee,

ASA T. NEWHALL.

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## ON BULLS.

The Committee on Bulls have attended to their duty, and in the absence of the Chairman, ask leave to REPORT:

That there were entered for premium nine bulls, most of which were part or full imported breeds of Ayrshire, Durham and Devonshire breed. A fine native bull-calf was presented by Henry Poor, of Andover, which your Committee thought worthy of notice, although not entered for premium on account of his age.

Your Committee are of the opinion that we have the elements of the best stock (if there were sufficient pains taken to preserve the best blood, to raise stock from) which can be found anywhere, and would earnestly invite the attention of the farmers of Essex County to the selection of such animals as have suitable marks, for breeders, in order to improve the breed of our native stock, instead of importing foreign breeds.

But as it is, your Committee have awarded to Hazen Ayres, of Salem, the first premium of seven dollars, for his bull two years and eight months old.

To Orin Putnam, of Danvers, the second premium of six dollars, for his bull two years and six months old.

Thomas E. Payson, of Rowley, the third premium of five dollars, for his bull, three years old, this autumn.

To Josiah Crosby, of Andover, the fourth premium of four dollars, for his bull, half Devon and half Ayrshire, two years and four months old.

To Richard Potter, of Ipswich, the fifth premium of three dollars, for his native bull, thirteen months old.

Your Committee regret that so few native bulls were presented, and hope in future that there will be more.

For the Committee,

JONAS HOLT.

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## ON WORKING OXEN.

The Committee on Working Oxen have attended to the duty assigned them, and REPORT:

That seventeen pair of working oxen, and two pair of three year old steers, were entered for premium, by the following persons:

| | | | | |
|---|---|---|---|---|
| Francis Dodge, | of Danvers, | two pair, | 6 | years old. |
| Jonathan Berry, | of Middleton, | one pair, | 5 | " |
| Nathaniel Felton, | of Danvers, | " | 6 | " |
| Orin Putnam, | " | " | 7 | " |
| Richard Dodge, | of Wenham, | " | 7 | " |
| Joseph Horton, | of Ipswich, | " | 5 | " |
| J. Osgood Loring, | of Andover, | " | 7 | " |
| B. W. Crowninshield, | of Topsfield, | " | 6 | " |
| Mark A. Davis, | of Danvers, | two pair, | 5 & 4 | " |
| Elijah Clough, | of Lynn, | one pair, | 5 | " |
| Moses Pettingill, | of Topsfield, | " | 7 | " |
| Joseph Kittredge, | of Andover, | " | 5 | " |
| Ira Worcester, | of Ipswich | " | 5 | " |
| Perley Goodale, | of Danvers, | " | | |

THREE YEARS OLD STEERS.

One pair by Elijah Pope, of Danvers.

" by William Foster, of Andover.

The power and movement of the cattle were tried with a load of

5000 lbs. in a wagon weighing 1800 lbs.; total 6800. Fifteen pair were tried, and one pair was excluded, on account of their not being entered in the owner's name. After duly considering the action, size and strength, and ages, the Committee award:

| | | | |
|---|---|---|---|
| To Mark H. Davis, | of Danvers, | the first premium | $10 |
| To Jonathan Berry, | of Middleton, | the second " | 8 |
| To Ira Worcester, | of Ipswich, | the third " | 7 |
| To Orin Putnam, | of Danvers, | the fourth " | 6 |
| To Francis Dodge, | " | the fifth " | 5 |
| To Mark H. Davis, | " | the sixth " | 4 |

They also award for three year old steers:

| | | | |
|---|---|---|---|
| To William Foster, | of Andover, | the first premium, | $7 |
| To Elijah Pope, | of Danvers, | the second " | 6 |

JOHN NEWHALL,
JOHN DORR,
WILLIAM OSBORN, } Committee.
F. ALLEY,
AMOS SMITH.

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## ON STEERS.

The Committee on Steers have examined the stock of this description entered for premium, and REPORT:

That William Foster, of Andover, exhibited one pair three year old steers.

Jacob Farnum, of Andover, two pair, three years old, and three pair, two years old.

Jedediah H. Barker, of Andover, one pair, seventeen months old.

David S. Caldwell, of Byfield, one pair, one year old last spring.

John B. Jenkins, of Andover, one pair, three years old.

Daniel Hoyt, of Haverhill, one pair, three years old.

There were also two other pair shown to the Committee, and entered as four year old steers; one pair, by Benjamin Poore, Indian Hill farm, West Newbury, and the other pair, by Jacob Farnum, of Andover.

The above described stock was of fair quality, and some pairs were considered by the Committee very superior, particularly a pair from Daniel Hoyt, of Haverhill.

The ten cattle, from the farm of Jacob Farnum, of Andover, although not large, were well formed animals, and well matched.

The four year old cattle, from the Indian Hill farm, would compare well with any cattle at that age, but are not considered as coming in competition with three year olds, and not entitled to premium under any rule of the Society, unless entered as fat or working cattle.

For three year old steers, the Committee award:

The first premium, of seven dollars, to Daniel Hoyt, of Haverhill.

The second premium, of six dollars, to John B. Jenkins, of Andover.

The third premium, of four dollars, to William Foster, of Andover,

For two year old steers, the Committee award the first, second, and third premiums, of six, four and three dollars, to Jacob Farnum. of Andover.

For yearling steers, the Committee award:

The first premium, of four dollars, to David S. Caldwell, of Byfield.

The second premium, of three dollars, to Jedediah H. Barker, of Andover.

MOSES NEWELL, Chairman.

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## ON HEIFERS.

The Committee on Heifers, REPORT, as follows:

The number of entries were eighteen. All the animals were native, and various crosses with native, and Durham, and Ayrshire breeds.

The number of premiums at the disposal of the Committee, was twelve, and in amount, fifty dollars. And they were divided into three classes:

First class. Heifers in milk, three months or more.
Second " " two years old.
Third " " yearlings.

The Committee are of opinion that the exhibition of heifers, as a whole, was not equal to what might have been expected, taking into the account the liberal amount of premiums, the ease and convenience with which this stock is brought to our exhibitions, and the profit to the farmer in raising this kind of stock. At the present prices of stock, no part of the farmer's profits would be better than raising of cattle for labor and for the purposes of the dairy, if due care be taken in selecting the best calves.

The heifers in milk were good. Samples of butter were exhibited to the Committee, which was of fine quality. The statement of the claimants will accompany the report of the Committee.

The heifers not in milk, were generally in high flesh, and many were very handsome animals. But the Committee felt that their duty required them to examine with reference to their qualities as milkers, of which it is, undoubtedly, very difficult to judge from appearance, with certainty.

After as careful examination as time would permit, the Committee agree unanimously to award to the claimants, for the first class:

| | | |
|---|---|---|
| To David S. Caldwell, of Byfield, the first premium of | | $7 00 |
| To Ammi Smith, of Hamilton, the second | " | 5 00 |
| To Eben Putnam, of Danvers, the third | " | 4 00 |

SECOND CLASS.

| | | |
|---|---|---|
| To John Low, of Lynn, the first premium of | | 5 00 |
| To Moses Newell, of West Newbury, the second premium of | | 4 00 |
| To Joseph T. Haskell, of Beverly, the third | " | 3 00 |
| To Josiah Crosby, of Andover, the fourth | " | 2 00 |

THIRD CLASS.

| | | |
|---|---|---|
| To Francis Dodge, of Danvers, the first premium of | | 5 00 |
| To Richard P. Waters, of Beverly, the second | " | 4 00 |
| To David S. Caldwell, of Byfield, the third | " | 3 00 |
| To Richard Hawkes, of Saugus, the fourth | " | 2 00 |

A heifer calf, nine months old, was entered by Col. Poor, of the Indian Hill Farm, for which he would have well deserved a premium, had any premium been offered for such animals. It well sustained the character of his stock, which have so often taken the premiums at our cattle shows.

A very large and handsome two year old heifer was entered by Dr. Kittredge, of Andover, which attracted the attention of the Committee, but upon a more close examination, they judged her marks for beef were more fully developed than for a milker.

Respectfully submitted,

DEAN ROBINSON, Chairman.

Lynn, September 28, 1848.

DAVID S. CALDWELL'S STATEMENT.

*To the Committee on Heifers:*

GENTLEMEN,—I offer for premium a two year old heifer, of half native and half Durham breed. She calved June 19. Her calf was large, and at first I took about five quarts of milk per day from it, gradually allowing it more, till it was three weeks old; at that time the calf was fat, for a calf of the age. I then allowed it to take as much milk as it would, and it soon sickened, which was probably owing to the richness of the milk. It was sick more than a week, and at five weeks old I sold it to the butcher, and it weighed 18 lbs. per quarter. At that time she gave ten quarts of milk per day. The 11th inst. she gave 7 quarts per day, and we made six lbs. of butter from her in one week. Her keeping has been such as young cattle usually receive in the vicinity of the marshes; salt hay, corn fodder, and straw, in winter, and common pasture in summer; she has been yarded nights, the two past summers. Her flesh will indicate her keeping. She has had green corn stalks for four weeks past.

D. S. CALDWELL.

Byfield, Sept. 28, 1848.

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AMMI SMITH'S STATEMENT.

*To the Committee on Heifers:*

I offer for premium, two heifers, raised by myself, a pied heifer, and a red one. The pied heifer is of the native breed, three years old, in March last. She had her first calf, February 2d, 1848, and I sold the calf Feb. 26th, (24 days old,) for five dollars.

| | | | lbs. | oz. |
|---|---|---|---|---|
| The amount of her milk from | | March 1st to 31st, was | 545 | 4 |
| " | " | April 1st to 30th, | 542 | 6 |
| " | " | May 1st to 31st, | 604 | 8 |
| " | " | June 1st to 30th, | 757 | 1 |
| " | " | July 1st to 31st, | 805 | 7 |
| " | " | Aug. 1st to 31st, | 714 | 2 |
| " | " | Sept. 1st to 15th, | 312 | 0 |
| Total, | | | 4280 | $\frac{12}{16}$ |

The red heifer is from a half blood Ayrshire cow, by a short horned Durham bull; both of which I brought from Alexandria, D. C. She was four years old in August. She had her first calf, April 28th, 1848, and I sold the calf, May 25th, (27 days old, weight 146 lbs.) for $5 84.

| | | | lbs. | oz. |
|---|---|---|---|---|
| The amount of her milk from | | May 25th to 30th, was | 119 | 4 |
| " | " | June 1st to 31st, | 708 | 6 |
| " | " | July 1st to 31st, | 819 | 5 |
| " | " | Aug. 1st to 31s;, | 644 | 4 |
| " | " | Sept 1st to 15th, | 288 | 8 |
| Total, | | | 2579 | 11/16 |

As I keep only these two cows, and use the milk for the usual wants of two families, from them, I cannot give a statement of the butter through the season; but I had the milk kept separate for one week in May, and the butter churned from it in that week, was as follows:

From the pied cow 1 lb. butter to 28¾ lbs. milk.

From the red cow, 1 lb. butter to 31 lbs milk.

Their keeping through the winter, was common meadow hay, and herdsgrass and clover, in about equal quantities. During the summer, until about the first of August, they had nothing but pasture feed, and not the best of that. For about four weeks from the first of August, I fed them at night, on corn fodder planted for that purpose, in addition to the pasture feed, then the pasture gave out entirely, and I have kept them on top stalks ever since.

AMMI SMITH.

Hamilton, September 16th, 1848.

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EBEN PUTNAM'S STATEMENT.

*To the Committee on Heifers:*

GENTLEMEN,—I offer for your notice a heifer, which I selected from a drove about the middle of November last. Her keeping through the winter, until her calving, was common hay and corn fodder. She calved February 25th. The first week I took from the calf half of the milk, the second week a quarter, after that I let the

calf have all it would take. At four weeks old, I sold the calf for seven dollars; it weighed 20 pounds the quarter. From the time of calving, her feed has been good English hay, with one quart of Indian meal a day, which has been continued except a few weeks at the height of the feed. Through the summer she has been in a good pasture, with other cows, and has been fed with green corn stalks, at night, since the middle of July.

The second week in June her milk yielded 8 lbs. of butter, of the first quality; she then gave ten to twelve quarts of milk per day. Her milk was set four days last week and produced 4 lbs. butter, a sample of which may be seen to-day by the Committee. She gives at this time about 8 quarts per day.

EBEN PUTNAM.

North Danvers, September 28th, 1848.

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## ON MILCH COWS.

The Committee on Milch Cows recommend the awarding of the Society's premiums, as follows:

| | | | |
|---|---|---|---|
| To Joseph Kittredge, | of Andover. | 1st premium, | $10 |
| To John Allen, | of Lynn, | 2d " | 9 |
| To Sylvanus Newhall, | of " | 3d " | 8 |
| To A. B. Lord, | of Beverly | 4th " | 7 |
| To John Marsh, | of Danvers, | 5th " | 6 |
| To Joseph Allen, | of Lynn, | 6th " | 5 |
| To Abner Newhall, | " | 7th " | 4 |
| To George F. Lord, | " | 8th " | 3 |

The additional number of premiums, this year, offered on milch cows, by the Society, was a sufficient inducement to bring to the fair an unusual number of competitors. The display of milch cows, in point of number and superiority, was highly gratifying. Your Committee were in possession of written statements, where neither cows nor owners could be found to answer to them. We saw several superior looking cows on the common, near the pens, but could find no keepers, and could not identify them by any of the written statements in our possession. If they were brought to the show and

entered for premiums, it is matter of regret that they could not have been accommodated with pens. Other cows were exhibited, whose appearance made a favorable impression on the Committee; but the statements which accompanied them were so deficient that they could not be entitled to premiums under the rules of the Society.

Considering the number and variety of cows, their different qualities, their relative value, and the cow best adapted to our climate, keeping, and wants, we think that the short time allowed to decide upon the claims of the numerous applicants for premiums, will be a sufficient apology, if we have in the judgment of any others committed any errors in recommending the Society's premiums. We endeavored to arrive at just conclusions, and were unanimous in our decisions. The many necessaries and luxuries of life, and the sources of industry and income which directly or indirectly receive their origin from the cow, place her among the invaluable blessings with which a beneficent Providence has favored us. To improve the cow so as to produce better milkers, with form, size, and constitution best adapted to our fare and climate, should be the studious solicitude of all engaged in rearing neat stock. How this can be best effected, experienced and intelligent men differ in opinion. Here the chairman of your Committee will venture a few remarks, and for which he is alone responsible.

Having more than twenty years since, introduced the Durham short horns into my stock, and subsequently other approved breeds, I can speak from experience; and although three of the best cows I have ever owned were of the cross breed, yet I think, on the whole, the milking qualities of my stock has not thereby been improved. If there have been exceptions, I have found in the aggregate the Durhams give less milk than the natives, in proportion to the food they consume, and their milk is of a poorer quality. I much prefer the half blood Durhams to the natives for oxen; they are of better form, larger size, and faster travellers. The objections brought against them by some, that they possess constitutions not adapted to our hard climate, I have not yet from experience or observation found correct. I have seen them severely tested in the log swamp in winter; on the farm and road in summer, for a period of six years, and at the age of ten years fatted, and have never known their equals that were of the native breed. If the Durhams are not the better milkers, they are better for the stock grower, and should

be encouraged in proportion as that branch of husbandry should be encouraged in the County. Whether the improved short horns have, or have not received, in this County, the premiums they were justly entitled to, I do not here pretend to say; but I do say, that I prefer a good animal to a favorite pedigree. Those that would derive a good profit from the cow, must give her good keeping, as a large portion of the nourishment she takes is necessary to supply the natural waste of the body; if she has no more than is necessary for that supply, all you get in milk you loose in flesh, and lose the keeping of your cows. How to keep a cow so as to derive the greatest profit, is a matter of importance to those engaged in this occupation. Much depends on the feed, and as much on the manner of feeding and sheltering. The oftener you feed, the less waste of fodder and the better the cow will thrive. In this, every one must be governed by circumstances, taking into account the value of the time of the feeder, the number of cows to be fed, &c. Any one accustomed to milking in winter, has often noticed how greatly the quantity of milk has diminished, in severe cold weather. This proves the importance of warm barns; and dry beds are also necessary. Abridge her comforts and you diminish her milk, and no one will say that she is as comfortable if she lies with her sides soaked in urine as she would be if she had a dry bed. An intelligent farmer who keeps a large stock of cattle, recently told me that he was in the habit of spreading thatch upon his grass land, and for every ton of thatch he got an additional ton of English hay. Straw, thatch, and damaged salt hay are abundant in most parts of the County, and if used for cattle to lie upon, and saturated with urine, their value for manure would be greatly increased. Who would not prefer coarse fare and good lodging to a sumptuous supper and a cold wet bed?

If cows have animal feeling, judge of their wants by your own. Kind treatment is of the first importance. Many good cows are made worthless to their detulant managers, from abusive treatment. The cow, from fear, or pain, on account of soreness of the udder or teats, is often unquiet when milked, and being tied by the neck and having no other means of defence, kicks, to rid herself of her uncomfortable companion. This not unfrequently induces the intelligent and reasoning milker to retaliate with harsh words and heavy blows, reasoning, no doubt, (if reasoning at all,) that by so doing, she may be persuaded that she is in no danger of harm, while under

such a protector. The stupid animal, not appreciating the argument, again resorts to her only defence, and the milker again resumes his argument with more powerful appeals to her sides, and for a time she is spoiled from downright stupidity. But which is the more stupid, which the more rational or the more brutal, the cow or the milker, no one will for a moment hesitate to decide. Such cows can, nineteen cases in twenty, be reclaimed in a few weeks, by kind words and gentle treatment. Here I say what I know from experience. Having for more than ten years been in the habit of purchasing such cows, when offered for a few dollars less than would otherwise have been their value. I have within a few years bought two kicking cows, and both are now gentle milkers. That all cows are equally docile, I do not pretend to say. It is far otherwise. Some cows require much caressing, such as currying, feeding from the hand, &c., before they can at all times be approached without showing signs of fear. It is a well known fact, that animals of the most ferocious character are trained to dwell harmoniously together. If lions and tigers may be tamed, how little, comparatively, is the skill required to tame the most gentle domestic animals.

Our climate is well adapted to the health of the cow, and with proper care, there is but little loss to the owners from disease. Yet her diseases should be known and attended to. Nature must be the principal agent in effecting a cure. Comfortable shelter and appropriate food, are in most cases the best prescriptions.

Respectfully submitted,

D. S. CALDWELL, Chairman.

Byfield, October 1st, 1848.

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JOSEPH KITTREDGE'S STATEMENT.

*To the Committee on Milch Cows:*

GENTLEMEN,—I offer for premium, my cow, Fairface, No. 2. She is six years old, of mixed breed. She calved on the first day of June last. Her calf, a heifer, was taken from her the third of June, and her milk weighed, night and morning, for 30 days. She gave from the third of June, to the third of July, 1291 lbs. of milk,

or an average of $43\frac{1}{30}$ lbs. a day. By measuring her milk, I ascertained that a quart of it weighed $2\frac{4}{10}$ lbs., which makes her average yield per day, $18\frac{5}{24}$ quarts. I commenced weighing her milk again on the fifteenth of September, and weighed it for one week. She gave 185 lbs.—$26\frac{3}{4}$ lbs. per day—11 quarts and a fraction. Her feed through this time, has been common pasture, with five or six other cows, and her necessary travel has been four miles a day. She has never eaten any grain. Her winter keeping is very ordinary. She is expected to calve again on the 24th of March, and will give milk to within three weeks of calving. Her milk is of the first quality. Ten pounds of butter were made from her in one week, and some of her milk used for other purposes.

JOSEPH KITTREDGE.

North Andover, September 27th, 1848.

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SYLVANUS NEWHALL'S STATEMENT.

*To the Committee on Milch Cows:*

GENTLEMEN,—The cow I offer for premium is eight years old, November next. She had her last calf on the 30th of March. I have tested her properties of milk for butter, and kept a correct account of the number of pounds of milk she gave for thirty days, from May 27th to 25th of June. She gave in that thirty days $1255\frac{1}{4}$ lbs.; 43 ounces of her milk measures a quart, making an average of 15 quarts and a pint for each day. I sold three pints, (with what was used in my family) each day; from what remained, 422 quarts, I churned $56\frac{1}{2}$ lbs. of first rate butter. Reckoning the 45 quarts sold to have yielded in the same ratio, it will make a total of $62\frac{1}{2}$ lbs. for the above mentioned thirty days, $7\frac{17}{56}$ quarts of milk producing a pound of butter, a little rising two pounds per day. The butter was not weighed till after two thorough workings with the hands, the last working being done the second day after churning. The two succeeding months, I kept an account of the weight of the butter only. From June 26th to July 31st, $50\frac{1}{4}$ lbs., used and sold 2 quarts per day, equal to $59\frac{19}{11}$ lbs. for 36 days. In the month of August, I churned 32 lbs. and sold and used 2 quarts per day, equal to $40\frac{5}{11}$ lbs. Twenty-four days of this month's (September) milk, I churned

24½ lbs. of butter, and sold and used 3 pints per day, equal to 30 lbs. of butter; 121 days of milk gives 192$\frac{19}{32}$ lbs. of butter. This cow, I suppose, has some Durham blood in her; she is from Mr. Albert Johnson's cow, which obtained a premium a few years since, and was one year old when I purchased her. She is kind and gentle. Her pasture was good; 15 quarts of meal was given her during the first 30 days.

SYLVANUS NEWHALL.

Lynn, September 27th, 1848.

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A. B. LORD'S STATEMENT,

*To the Committee on Milch Cows:*

GENTLEMEN,—The cow I offer for premium, is nine years old. She had her last calf August 21st, 1848, which went away September 2d. The amount of milk for one year, to June 25th, 1848, was 8767 lbs. Previous to her calving, we made from May 9th, to July 20th, 61½ lbs. butter, and also supplied the family and sold 80 quarts of milk. From July 20th to September 2d, the family and calf took all the milk. From September 2d to 25th, have made from her 26 lbs. butter, and in all, 87½ lbs. this season. Her feed in winter was English and meadow hay, with ten bushels carrots, and eight of turnips; in summer, grass, with some corn fodder since she calved.

A. B. LORD.

Beverly, September 28, 1848.

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JOHN MARSH'S STATEMENT.

*To the Committee on Milch Cows:*

GENTLEMEN,—I offer for premium my white face cow, which I raised from native breed. She was eight years old the first day of July. She calved, the present year, the 27th day of May, having been dry only 28 days. Her calf was sold the last day of June, and we have kept an account of her milk, by weighing, as follows:

From July 1st to 31st, 31 days, 1262 pounds.

| | | |
|---|---|---|
| From Aug. 1st to 31st, | 31 days, | 1012 pounds. |
| From Sept 1st to 27th, | 27 " | 912 " |
| | 89 days. | 3186 pounds. |

Averaging $35\frac{71}{89}$ lbs. per day.

The first week in July, we kept her milk separate for butter. She gave 306 lbs. of milk, from which we made 15 lbs. of butter, being an average of $20\frac{2}{5}$ lbs. of milk to one of butter.

Her keeping, during the winter, was meadow hay, straw and corn fodder; in the spring, she had English hay, till the calf was taken off. Since the first of July, she has had one quart of meal per day, and common pasturing, till the severe drought, when she was given hay.

I send, as a sample, a box of seven lbs. of butter, made from her milk.

Last year, we weighed her milk for one week, at the first and last of the season, and by averaging it, made it very nearly as much as the present year.

JOSEPH MARSH.

Danvers, September 27th, 1848.

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JOSEPH ALLEN'S STATEMENT.

*To the Committee on Milch Cows:*

GENTLEMEN,—The cow owned by me, and presented for premium, is eight years old. I have kept an account of her milk, and from April 28th to Sept 28th, the present year, she had given 2405 quarts.

JOHN ALLEN.

Lynn, September 28th, 1848.

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ABNER NEWHALL'S STATEMENT.

*To the Committee on Milch Cows:*

GENTLEMEN,—The cow which I offer for premium is nine years

old, (or, possibly ten.) She calved on the 16th of April last. The calf was taken from her on the 24th of the same month. Her time for another calf is the 19th day of February next. She has given milk, as follows:

From April 25th to the present time, I have kept an account of her milk, by weighing, night and morning. Below is the result:

| | |
|---|---|
| From April 25th to 30th, | 268 pounds. |
| From May 1st to 31st, | $1281\frac{10}{16}$ " |
| From June 1st to 30th, | $1308\frac{3}{4}$ " |
| From July 1st to 31st, | $1217\frac{2}{16}$ " |
| From August 1st to 31st, | $1156\frac{6}{16}$ " |
| From September 1st to 26th, | $890\frac{6}{16}$ " |
| | $6122\frac{1}{4}$ pounds. |

Making $2448\ \frac{36}{40}$ quarts, $15\ \frac{71}{100}$ quarts per day.

Her keeping has been good hay up to the 12th of May, since which it has been grass, (and a part of the time the feed was short,) with the addition of wheat bran half of the time.

ABNER NEWHALL.

Lynn, September 27th, 1848.

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G. F. LORD'S STATEMENT.

*To the Committee on Milch Cows:*

GENTLEMEN,—I offer for premium my cow, ten years old. She has given the following quantity of milk, from November 27th, 1847, to September 28th, 1848, viz.: 5662 lbs., or 2384 quarts, reckoning at 2 lbs. 6 ounces per quart.

Amount of milk sold, 2000 quarts, at 5 cents per quart, $100. Her feed during winter was clover hay, of an inferior quality, and 1 peck of carrots per day. In summer, pasture feed. She will calve previous to the middle of November.

G. F. LORD.

Beverly, September 28, 1848.

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[The statement of Mr. John Allen did not come to hand in season to be inserted.]

## ON PLOUGHING WITH DOUBLE TEAMS.

The Committee on ploughing with double teams, present Jacob Brown, Thomas E. Payson, William Johnson Jr., Tristram Little, and Horace Ware, Jr., REPORT:

That sixteen entries were made, by the following persons:—Francis Dodge, Danvers. Richard S. Jacques, Newbury. Nath'l Felton, Danvers. Orin Putnam, Danvers. Richard Dodge, Wenham. Joseph Horton, Ipswich. James Marsh, Danvers. Joseph Kittredge, Andover. B. W. Crowninshield, Topsfield. William Sutton, Salem. John Newhall, Lynn. Daniel Roberts, Lynn. John Washburn, Lynn. Elias Clough, Lynn. Moses H. Poor, West Newbury, and Ira Worcester, Ipswich.

The time occupied by the different teams in performing the work, varied from twenty-five to forty minutes. With one or two exceptions, the work was remarkably well done. In fact, the Committee believe that at no previous exhibition, have there been so many teams, all doing their work so well, and so nearly alike. This being the case, it was a very hard task to award four premiums to the proper persons. If there had been three times the number of premiums, the Committee would have taken great pleasure in awarding them all, for there was at least that number of deserving competitors. The lands of some of the competitors were very bad to plough, and plough well. Particularly was this the case on the low part of the land, the nature of the ground making it necessary to plough too deep or too shallow, and thus very much retarding or destroying the work. The Committee would venture to recommend, that a larger number of premiums be offered for ploughing with double teams. It is *the* team generally used for ploughing grass land in this County, and there are usually quite as many entries as can be well acommodated on the ground selected for ploughing. The Committee found it exceedingly difficult to satisfy their own minds, as to whom the premiums should be given, but after a great deal of examination and consultation they have awarded the premiums as follows:

| | |
|---|---|
| To Moses H. Poor, of West Newbury, the first premium of | $10 |
| To Richard Dodge, of Wenham, the second premium of | 8 |
| To John Washburn, of Lynn, the third premium of | 6 |
| To Ira Worcester, of Ipswich, the fourth premium of | 4 |

For the Committee,

JACOB BROWN, Chairman.

## ON PLOUGHING WITH SINGLE TEAMS.

The Committee on Ploughing with Single Teams, consisting of Andrew Dodge, of Wenham, Samuel C. Pitman, of Lynn, Benjamin Porter, of Danvers, Francis Ingalls, of Andover, and Hazen Ayers, of Salem, respectfully REPORT:

That eight teams were entered, six only appearing on the ground as competitors for premiums, viz.: Francis Dodge, Elijah Pope, and Mark H. Davis, all of Danvers; Moses Pettingill, of Topsfield; J. Osgood Loring, of Andover; and John Northend, of Byfield. The land for ploughing was marked off in lots of about one sixth of an acre each, and numbered from one to about thirty; those assigned to the single teams were from nineteen to twenty-four inclusive, and were drawn and ploughed as follows, viz.:

| Lot | was drawn by | and ploughed in | | | |
|---|---|---|---|---|---|
| No. 19 | Mark H. Davis, | 46 | minutes, | 32 | furrows. |
| No. 20 | Francis Dodge, | 48 | " | 38 | " |
| No. 21 | John Northend, | 48 | " | 35 | " |
| No. 22 | J. Osgood Loring, | 46 | " | 33 | " |
| No. 23 | Elijah Pope, | 40 | " | 35 | " |
| No. 24 | Moses Pettingill, | 44 | " | 33 | " |

The Committee, after the most careful examination they were able to make, both while the teams were ploughing, and after they had left the ground, would state that in their opinion, the ploughing, as a whole, was done in a neat and workmanlike manner, and highly creditable to all those engaged in its performance. And they recommend that the premiums be awarded as follows, viz.:

The 1st premium of $8, to Elijah Pope, of Danvers,
" 2d " $6, to Francis Dodge, "

And that the 3d and 4th premiums be divided equally, between Moses Pettingill, of Topsfield, and John Northend, of Byfield, that is, $3 to each of them.

The plough, belonging to Elijah Pope, which obtained the first premium, was Eagle, No. 9, manufactured by Ruggles, Nourse & Co., and a large majority of all the ploughs we saw on that day, were of the same manufactory.

For the Committee,

ANDREW DODGE.

December 12th, 1848.

## ON PLOUGHING WITH HORSE TEAMS.

The Committee on ploughing with Horse Teams, REPORT:

That five teams were entered for premium, four of which appeared upon the ground. Three of them performed their work very finely. and it was with some difficulty that the Committee could decide to whom the premiums should be awarded. But after careful examination, they awarded the premiums as follows, viz.:

| | |
|---|---|
| To William G. Brown, of Ipswich, the first premium of | $8 00 |
| To John G. Walcott, of Danvers, the second premium of | 6 00 |
| To John Dorr, of Ipswich, the third premium of | 4 00 |

John Grout, of Danvers, appeared upon the field with one horse, of large size. He commenced his work very well, but probably owing to the encroachments of the spectators, caused by *inefficiency of Police*, he became unmanageable, and was obliged to be taken from the field.

For the Committee,

J. KITTREDGE.

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## ON FARMS.

The Committee on Farms, (present T E. Payson, Samuel C. Pitman, Lewis Allen, and Jonas Holt,) REPORT:

That two farms were entered for premium, lying at two extremes of the County,—one in Methuen, the other in Lynn, near the line of Saugus. But they were not so far remote from each other in place, as they were in the character of their soil, and in their whole general appearance. The one in Methuen, entered by Leverett Bradley, is upon the Merrimack, and stretches along nearly a mile upon the bank of the river. The soil is inclining to sand. Probably there is not a rock upen the whole of it too large to be turned ont by the plough. The accompanying statement of Mr. Bradley shows what it was a few years ago, and what it now is. Probably no farm in the County was more attractive in its appearance than was this, when your Committee visited it in July. About seventy acres of grass in one body, which, in the opinion of the Committee, would produce two tons of hay per acre, on the average, and fifty acres of rye, at that time ready for the harvest, adjoining, which could all be seen distinctly from Mr. Bradley's house, without a tree, a shrub, or a

stone, to intercept the view, is a sight, rarely to be met with in the State, and probably in the County, has no parallel. Indeed, very few farms can be found anywhere, which, for beauty of location, can equal this. Your Committee are of opinion, that Mr. Bradley, in the management of his farm, understands and applies the principle of the old Latin Poet, which next to manuring, is most important to the farmer:

> "What every soil will bear, and what refuse,
> This Corn, that vines more kindly doth produce,
> Young trees thrive best, here there grass freely grows,
> And odorous saffron, Tmolus bestows."

The farm in Lynn, belonging to Henry B. Newhall, furnishes complete proof of the fact that it is much better for the farmer to clear new land at home in New England, than to go abroad to do it. That part of Mr. Newhall's farm now under cultivation, containing about fifteen acres, was bought by him, something less than ten years ago, for $20 per acre. At that time, it was all covered with a moderate growth of wood, which seemed to spring up out of the crevices in the rocks, the land being apparently full of them. The sale of the wood paid for the land, for fencing it most substantially, for cutting and marketing, and left a small surplus in its favor—Mr. Newhall did not say how much. His statement shows how many rocks he has taken from the land, and to what account he has turned them, and he has "a few more of the same sort left." It also shows what produce he has taken from his land, and at what expense. He has set out about five hundred apple trees, and the soil being admirably adapted for their growth, they appear in a most thrifty condition. Mr. Newhall's experiment shows what enterprise well directed, is able to accomplish, and furnishes an example which it may be well for many of us to study and imitate. Literally he has made the wilderness to bud and blossom as the rose, and at the same time —which is a most important element in the matter—has been putting money into his pocket, instead of paying it out. But Mr. Newhall is just beginning. If he goes on as he has begun, he will in a few years have one of the most productive and profitable farms in the County. Mr. Newhall has a store in Lynn, which accounts for the prices he has set against some articles of produce.

The Committee think the farm of Mr. Bradley entitled to the first premium, and therefore recommend that the first premium of twenty-five dollars be awarded to him.

They also recommend that the third premium of ten dollars, be awarded to Henry B. Newhall, of Lynn.

For the Committee,

T. E. PAYSON.

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LEVERETT BRADLEY'S STATEMENT,

*To the Committee on Farms:*

GENTLEMEN,—The farm which I offer for premium, contains in all about 200 acres. Twenty-five acres, or thereabouts, are now covered with trees and bushes, which I have not attempted to clear. The remaining 175 acres are now in Pasture, Mowing and Tillage, very nearly in the following proportions, excepting about two acres covered by the buildings, enclosed as yards, &c. to wit: 70 acres Mowing, 50 Rye, 50 Pasture, 3 Potatoes. It is five years, since I commenced any improvements. At that time, the whole quantity of hay cut upon the entire farm did not exceed forty tons. Of this, a large proportion was meadow grass and of a poor quality. About 15 acres had been kept clear, for the purpose of tillage. The remainder of the 175 acres was covered with wood and bushes, in a great measure, there being some open land among them, which was used for pasture,—20 acres, at least, of what is now mowing, would have been considered almost worthless. I have this year about 70 acres in mowing, which has averaged two tons of hay per acre. The quality of the hay you can determine, from what you saw of it in July. About 30 of this 70 acres of grass land, is a reclaimed bog. It has cost me about $40 per acre, to bring the remainder of my grass land into the state which you saw it in, as you made the examination of the Farm. I have gained about 25 tons of hay per year, for four years, and as much in quality as quantity, over the hay formerly cut.

The rye on my 50 acres, averaged 20 bushels per acre. This land I seeded down to grass, and intend it for pasture another year. The crop of rye and the straw will pay for the labor of reducing the land to a state of cultivation, and for seeding it to grass. The 50 acres in pasture, I intend to seed in the same manner another year, with rye and grass and alternate from year to year, feeding one year and cropping with rye the next, and I think that I can thereby keep the land up to its present condition. Most of my rye land, as you per-

ceived, was pretty full of stumps, which gives you an idea of its former state. The wood which I have taken from it, has paid me about $1000 above all expenses. My 3 acres of potatoes gave me an average yield of about 75 bushels per acre.

There were about 300 old apple trees upon the farm, all of which have been grafted anew. In addition, I have had put down within the last and the previous year, 1000 apple trees and about 300 peach trees. The produce of my old trees was about 15 barrels, this year.

Formerly, I have kept some 20 cows, and sold the milk, a market for which is furnished by the new town of Lawrence. This year, I have no dairy, except for private use—my stock consisting of 8 oxen, 4 horses, and a few small cattle.

Very respectfully, your obedient servant,

LEVERETT BRADLEY.

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HENRY B. NEWHALL'S STATEMENT.*

*To the Committee on Farms:*

COST OF LAND.

| | | |
|---|---|---|
| 160 acres, at $20 00 per acre, | $320 00 | |
| Cost of walling land, | 110 00 | |
| | | $430 00 |
| Wood cut and sold, | $600 00 | |
| Cost of cutting and teaming, | 150 00 | |
| | | 450 00 |

STONES TAKEN FROM SAID LAND:

| | | |
|---|---|---|
| Laid in cellar wall, | 28,000 ft. | |
| " in wells, | 5,000 ft. | |
| " out on landing, | 2,600 ft. | |
| | | 35,000 feet. |
| Laid in stone wall, | | 400 rods. |

CROPS.

| | | |
|---|---|---|
| 1844. | | |
| First year. | 300 bush. Potatoes, at 60 cts. | $180 00 |

| | | | |
|---|---|---|---|
| 1845. | | | |
| Second year. | 350 bush. Potatoes, at 80 cts. | $280 00 | |
| " | 100 bush. Rye, at $1 12½, | 108 00 | |
| " | 60 bush. Turnips, at 20 cts. | 12 00 | |
| " | 20 doz. Cabbages, at 75 cts. | 15 00 | |
| " | 2100 lbs. Marrow Squash, at 3 cts. | 63 00 | |
| | | | 478 00 |
| 1846. | | | |
| Third year. | 10 tons of Hay, at $20 00, | $200 00 | |
| " | 160 bush. Corn, at $1 00 | 160 00 | |
| " | 50 doz. Cabbages, at 75 cts. | 37 50 | |
| " | 70 bush. Turnips, at 20 cts. | 14 00 | |
| " | 1056 lbs. Marrow Squash, at 3 cts. | 31 68 | |
| " | 65 bush Onions, at 60 cts. | 39 00 | |
| " | 300 bush. Potatoes, at $1 00, | 300 00 | |
| | | | 782 18 |
| 1847. | | | |
| Fourth year. | 200 bush. Potatoes, at $1, | $200 00 | |
| " | 60 bush Onions, at 75 cts. | 45 00 | |
| " | 45 bush. Turnips, at 20 cts. | 9 00 | |
| " | 60 doz. Cabbages, at 75 cts. | 45 00 | |
| " | 175 bush. Corn, at $1, | 175 00 | |
| " | 14 tons of Hay, at $18, | 252 00 | |
| | | | 726 00 |
| | | | $2166 18 |
| | Expense of labor, seed and manures, | | 1200 00 |
| | | | $966 18 |

Crops will be this year, about the same as last year.
Apple trees, 550 were set from one to four years,

H. B. NEWHALL.

November, 1848.

*The prices annexed to many of the articles in this statement, do not correspond with those which the Committee were able to command in the markets which they attended.

## ON IMPROVING WET MEADOWS AND SWAMP LANDS.

The Committee on Improved Meadows and Swamp Lands, REPORT:

That there have been four entries of claims for premiums the past year, and they have been examined by the Committee in the following order, viz. :

A lot of D. R. Merriam, of Topsfield, on the 10th of July. One entered by Leverett Bradley, of Methuen, visited by a part of the Committee on the 20th of July, and by another part, on the 12th of October. One entered by Stephen Osborn, of Danvers, and another by Richard Dodge, of Wenham, both visited on the 31st of August.

Your Committee finding an evidently increasing desire among the farmers of Essex for the improvement of this kind of land, felt it their duty to make minute examinations of such as they were called to visit.

After mature deliberation, the Committee recommend the premiums to be given as follows, viz. :

To Leverett Bradley, of Methuen, the first premium of $20 00
To Stephen Osborn, of Danvers, the second premium of 15 00
To Richard Dodge, of Wenham, the third premium of 10 00
To R. A. Merriam, of Topsfield, the fourth premium of Coleman's European Agriculture.

The Committee would state that the land of Dr. Merriam, which was part of a sunken swamp, and part plain meadow, would have stood more prominent, had it not been encountered by several powerful competitors. His land was well drained with good and sufficient ditches ; it seemed as if it had been formerly encumbered with stagnant waters ; and as it was neither springy, nor surrounded by springs, marginal ditches were not required. His method of merely spreading the mud from the intermediate spaces between ditches, and the expensive mode of spreading summer dung, or even compost, (if coarse gravel or loam could have been obtained,) would not be so highly approved by those who have experienced the good effects of the latter on meadow lands. He yet thinks well of gravelling, and recommends it, with only smoothing the surface. Many good farmers are still of opinion, that both ploughing, (where it is practicable) and gravelling, are important. The Dr. has given us a description of a hassock hoe, used by him ; there are other instruments for the purpose, that have been much approved ; yet this may be best for some parts of the work.

The situation of Mr. Bradley's land is in a very gentle swale, extending towards the Merrimack river, with a main ditch which he has dug wide and deep through the centre, and with cross ditches on either side leading to the same. It is naturally a rich alluvion; but the Committee can give Mr. Bradley no credit for the bounties of Nature, yet they cheerfully award to him much credit for the management of the great agricultural enterprise in which he is engaged. Thirty acres in a body, of well improved meadow land, producing for several years in succession, two and a half tons to the acre, is seldom seen. Sufficient evidence of this produce, we had, not only from one of our Committee, who visited it in July, while the crop was standing, and who remarked, that this extensive tract "of fine English grass growing, would delight the eyes of the beholder." But at the last visit, we availed ourselves of the testimony of the very intelligent Committee on Farms, who were present at that time, and to whom we were indebted for many just remarks. All testified their belief, that such was the uniform produce. Before the last visit, the devouring element of fire had deprived Mr. Bradley and ourselves, of examining the quality of the hay, and him of his large barn and all its contents of grain and hay.

The Committee were also much pleased with all Mr. Bradley's improvements, opening to view delightful prospects on the banks of the Merrimack. But we were more particularly interested in his wet meadow improvements. At the head of the swale, we observed a lot of several acres of shaking meadow, recently improved, which evidently bore his best grass, and adjoining a quagmire worthless swamp, which was a sample of his land before he commenced operations. On this improved lot, he had smoothed off the stumps so close as not to interfere with the scythe, thus saving the expense of digging them out, which seemed perfectly to answer all purposes. The Committee regret, however, that Mr. Bradley had not given a more detailed account in his statement, of his whole process, and "of all incidental expenses." About five acres, as he has stated, he ploughed and seeded without any gravel; this, it seemed evident by the stubble, was the least productive, and of poorer quality of grass, than on the other parts.

Mr. Osborn, having favored us with so full a statement, it will be unnecessary for the Committee to comment here so much at large. He seems to have proceeded according to the present most approved

methods, by thoroughly ditching and thoroughly gravelling. His is a lot of apparently poor land, formerly allotted as a parsonage, adjoining the village of South Danvers; his meadow surrounded by sharp rocky knolls. He has favored us with a carefully executed plan of his very ingenious method of ploughing by means of a running tackle, or snatch block, which may easily be applied in ploughing very soft and wet meadows. We saw a sample of Mr. Osborn's hay from his reclaimed meadow, and pronounce it of the first quality.

Mr. Richard Dodge, of Wenham, having also given a full, and somewhat detailed statement of his process, his expenses, and the produce of his land for several years, we are satisfied, from a careful examination, of the correctness of his statement in all particulars. And we would not omit to mention his worthy example of enterprise, industry and perseverance.

Respectfully submitted, for the Committee,

TEMPLE CUTLER, Chairman.

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LEVERETT BRADLEY'S STATEMENT.

*To the Committee on Reclaimed Meadows:*

GENTLEMEN,—I offer for premium a meadow, containing about 30 acres. The soil, as you observed on inspection, is inclining to peat, and varies from 2 to 10 feet in depth. On some parts of it, 3 or 4 feet below the surface, logs abound. Previous to the year 1842, the produce of the open part of it was a coarse meadow grass. About one third part of it was covered with bushes, and during the entire year, except perhaps a very short time in summer, water stood upon the whole of it.

In the year 1842, I commenced my improvements. Between that year and the year 1846, I have dug upwards of 1000 rods of ditches. My main ditch is about 100 rods in length, 5½ feet wide at the surface, and through its whole length dug to the hard pan at bottom. The other ditches average 2½ or 3 feet in width at the surface; all dug to the pan. The clearings of the ditches furnish the best material for compost, and without any admixture, make a very good top-dressing. About 5 acres of the meadow was ploughed and seeded without any gravel spread upon the surface. The remaining 25

acres were not ploughed, but gravel was spread on the surface to the depth of about 3 inches. My estimate of the cost of the land—including its original value, cost of labor and seed—is $100 per acre. I mean its original value and the cost of all improvement.

The first year, I have usually cut about half a ton per acre. The second year, I top-dress with about 10 carts full to the acre of a compost, the principal ingredient of which is sand. The second year, I have cut generally 2½ tons per acre. I think it better to top-dress, as above stated, once in two years.

This season, the crop, as the Commiitee observed before it was cut, averaged 2½ tons to the acre.

LEVERETT BRADLEY.

Methuen, October 23d, 1848.

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STEPHEN OSBORN'S STATEMENT.

*To the Committee on Meadow and Swamp Lands:*

The lot of land to which I ask the attention of the Committee, contains about five acres, of which about an acre and a quarter is meadow. In 1844 I cut off the bushes and small trees. This was done at the time of the summer solstice,—the latter part of June, from which time the roots began to decay, and with some few exceptions, they never again sent forth their sprouts. I selected this period of the year for the purpose, by the advice of an intelligent and observing farmer, now removed to Worcester county, who had cut bushes from his own land, at a similar time and with the same success.

In 1845, I opened the main ditch through the centre of the lot and commenced ploughing. Although the season was very dry, the meadow was too wet and soft to allow cattle to travel over it, and I was obliged to resort to an expedient which I will attempt to describe with the aid of a rough sketch on paper, which I send with this statement. I attached a block with a single pulley, to the trees on the upland, near the edge of the meadow, through which one end of a rope, communicated with a light plough, on the opposite side of the low ground, while the other was attached to the draft chain of a pair of cattle who were driven on the upland, a course at right angles

with that of the furrows, After the first five or six furrows, the block was placed the proper distance from the tree to make a second series of furrows, the block being secured in its new position, by a strong bar, set in the ground. The block was thus removed its proper distance for each successive series of furrows until the land was ploughed, the plough being each time drawn by hand, back to the opposite side of the meadow. I may here remark that the land may be back-furrowed into beds by securing the block on the opposite side and ploughing in that direction. During the ploughing, the land was so wet that the water followed the plough in the furrow. As to the comparative cost of this method of ploughing, the Committee will be able to judge from the fact, that the work was done in three days and a half, with one pair of cattle, two men and a boy. After ploughing I cut cross ditches on each side, communicating with the main drain; I then removed the gravel from the upland in wheel-barrows to the meadow, to the depth of about three inches. As the land was a soft quag-mire, boards were laid over it, on which to wheel the gravel. In the following winter I dressed the land with a compost of anthracite coal ashes, soil, waste lime, &c., from tanneries, the whole being well saturated with soap-boiler's spent ley. In the spring of 1846 I sowed it with one and half bushels red top, one and a half pecks herds grass, and two pounds clover, and cut that year two tons of English hay, of good quality. In 1847, the same lot of one acre and a quarter of land, yielded four tons.

This year, 1848, the yield from the same land has been four tons 220 lbs. of English hay, equal to upland.

The expenses and yield of the reclaimed land were as follows:

| | |
|---|---|
| Ploughing | $14 18 |
| Ditching and gravelling, | 18 00 |
| Compost, | 7 50 |
| Grass Seed, | 3 39 |
| | 43 07 |

CROPS.

| | |
|---|---|
| 1846—2 tons Hay at $16 | 32 00 |
| 1847—4 " " | 64 00 |
| 1848—4¼ " at 12, (sold from the field,) | 49 32 |
| | 145 32 |
| Deduct $4 per ton for making, | 40 00 |
| Income for three years, | $105 32 |

The above is a correct statement of my treatment of low and wet land with its results. Should the committee require further particulars they will be cheerfully given.

I ought to have stated that the plough used had a circular cutter attached to the roller, which did much to facilitate the work. The soil or bog before ploughing, was from two to six feet in depth, resting on a hard sub-soil of sandy clay. Since ditching and gravelling, the bog has settled a foot or more. The land was of little or no value before draining. The ditches which I have covered, operate so well, that I intend to cover the remainder. I filled the bottom of the ditch with small stones, te a gradual descent from the margin to the main ditch. I then placed two rows of larger stones down the centre of the ditch, and covered them with the flattest that I could select, and then covered the whole with currier's leather shavings, these being about a foot below the surface of the ground.

STEPHEN OSBORN, Jr.

Danvers, Sept. 20, 1848.

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RICHARD DODGE'S STATEMENT.

*To the Committee on Meadows and Swamp Lands:*

Gentlemen,—The piece of reclaimed wet meadow which I present for the consideration of the Committee, containing about two acres and three quarters, was in 1838 a sunken quagmire, almost entirely worthless, except for some small fuel, such as alders, blueberry bushes, brambles and grape vines, and except occasionally a tree. This piece of ground is one part, which you agreed with me in estimating at one and a half acres mowing ground, and one and a quarter acres on the south side of the large ditch, now in corn and potatoes. The last mentioned lot contained 30 cords of good wood, which I cut off and sold.

In the fall of 1838, it being dry, I burnt over the whole swamp, clearing up as soon as the fire was out, all stum ps and roots that remained unburned. The fire had burnt out many holes, as this peat soil was loose and deep, and many of these holes I will say a foot or a foot and a half deep. I then smoothed off all the humps, broken roots, &c., filling up all the burnt holes, making the meadow

smooth. This clearing up was only upon the one and a half acres now in mowing. The whole was then well drained by making three large and deep ditches lengthwise, one through the centre, between the present mowing and tillage lots, and one on each side. These ditches were three feet or more deep, 4 feet wide at the top and three at the bottom. Also a wide ditch across the lower end. The fuel I obtained from the stumps has paid, I think, all the expense of getting them out, as men had made the offer to do this work for the fuel. I therefore consider my expenses as paid up to the spring of 1843, except that of hauling on and spreading about two inches of sandy loam and gravel from an adjoining pit, over the greatest part of the one and a half acres. The remainder I covered afterwards and harrowed and smoothed the whole in the best manner I could, and then planted three fourths of an acre with potatoes, without any manure. The ashes from the burning and the loam I valued much. Roans, long reds and chenangoes were planted and at harvesting 12 hills made a bushel throughout. Cross ditches were made from the marginal to the main ditch, with the plough, and by clearing them out with the hoe.

Two years from the commencement I finished the remainder of the one and a half acres in the same manner, using no manure until the third year, when I put four cords on the whole, having obtained in each year about the same value in crops of corn and potatoes as at first. These crops even more than paid all expenses to 1843. I then hauled in the winter of 1842, a common top dressing of sandy loam and laid the whole down to grass, sowing a peck of herds grass and half a bushel red top, per acre, after ploughing and harrowing well.

*Produce of the one and a half acres for six years.*

| | | | |
|---|---|---|---|
| 1843—3 tons first crop at $15 00 per ton, | | | $45 00 |
| 1844—5 " " | 2 do. 2d crop, at $14 00 | | 98 00 |
| 1845—5 " " | 2 do. " | 14 00, | 98 00 |
| 1846—5 " " | 2 do. " | 18 00, | 126 00 |
| 1847—5 " " | | 13 50, | 67 50 |
| 1848—4½ " " | | 9 50, | 42 50 |
| Whole number, 33 1-2 tons. Sold for | | | $477 00 |
| Expense of seed, harvesting, &c., | | | 60 00 |
| Net amount for six years, | | | $417 00 |

By careful examination, I find the whole cost of reclamation did not exceed sixty dollars per acre.

The corn on the one and a quarter acres is estimated at sixty bushels per acre, and of the potatoes already dug 20 hills made a bushel. This lot was managed much in the same manner as the one described. It has been planted three years; the smallest crop the present year. Sandy loam was put on the part planted with corn.

Thus it will be seen that a large crop of hay has been raised six years in succession, without any additional top-dressing of any kind, and only four cords of manure, which was put on at the commencement. I consider the loam and gravel of more value for such grass land, than manure, if applied as a top-dressing.

RICHARD DODGE.

Wenham, Sept 27, 1848.

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R. A. MERRIAM'S STATEMENT.

*To the Committee on Reclaimed Meadow and Swamp Lands:*

GENTLEMEN,—I offer for your inspection and for premium, if you should think worthy of one, about four acres of partly meadow and partly swamp land, which in the course of six years I have been devoting some attention to, for the purpose of reclaiming it from a nearly useless state. I began about six years ago, (after my neighbor below me had opened a thorough water-course) by ditching and covering the intermediate spaces with the mud that was thrown out. These ditches were cut from the main one to the shore, about thirty feet apart, wide and deep enough to afford a perfect covering for the spaces between. After levelling and smoothing, I sowed hayseed, &c., raked it in, about a peck of herds grass and one bushel of red top seed to the acre. Without any other preparation, I cut from one to two tons of English grass to the acre. The quantity of grass lessened in the course of a year or two and I then spread on about five cords of compost manure to the acre in the fall, which increased the amount of hay to between two and three tons to the acre, and most of the meadow that I have worked upon is now in this state.

But the piece to which I have invited your attention and which I

pointed out to you, on your visit in July, about a week before the grass was cut, consisted mostly of bushes, from four to ten feet high, high blueberries, alder and swamp sumac or dogwood. This piece, containing about one and a quarter acres, was reclaimed by cutting and burning the bushes on the ground. On a part, the whole surface was removed, piled in heaps two years ago last spring, and in the fall burned. On another part the surface only was smoothed, removing the stumps and rubbish from the ground. I sowed the usual quantity of hay seed over the whole, and raked it in with an iron rake. I found it a little more difficult to get the seed to take where the surface was not disturbed, and a natural grass, called bluejoint, taken the place.

In 1847 I cut from the one and a quarter acres, about two tons of hay, mostly herds grass and red top. After haying, I put upon this acre and a quarter, about five cords of summer manure ; this year, 1848, I cut from four to five tons of good English hay, not differing in amount from what you estimated it at.

The roots and fuel taken from this land were worth about fifteen dollars. The cost, over and above upland tillage ground, may be fairly estimated at between twenty and thirty dollars, varying a little on different lands. On some small portions I have spread about two inches of coarse gravel, after sowing the hayseed. The cost of this method will be about the same ; and I am inclined to the opinion that this is the better method of reclaiming bog meadow land, where bushes do not cover the ground.

Where you intend to cover with gravel, the hassocks and all prominences should be first removed, and as even a surface left as possible ; then sow the hay seed and cover with about two inches of gravel. The gravelly portions of my meadow seemed to stand any weather better than the portion that was not gravelled.

For removing hassock, &c., I have used a hoe, constructed somewhat in the shape of a carpenter's adze, made of steel-plate, with the eye welded on the part near it, and riveted down the centre with two good rivets. The hoe should be about nine inches deep, and about six inches of cutting surface, ground in the same manner as a carpenter's adze. This tool may be so tempered as to take a very keen edge and may weigh about three and a half pounds and may be a little curved from the eye to the edge, the eye one and a half inches in diameter. Such an instrument will take off a root as big

as a mans' wrist, and bear pretty rough usage. It will be perceived that it will be necessary to get off all the bushes, roots, hassocks, &c., that are intended to be removed, before applying any gravel, since sharp tools cannot be used after the gravel is applied.

It will be observed that I have tried four different ways of reclaiming lands, viz : digging ditches, so as to cover the meadow with their contents, removing and burning the surface, together with the rubbish—spreading the ashes,—removing only the hassocks and prominences, and removing the surface and applying gravel.

The first I should not pursue again. I would only dig ditches enough to drain the land which should consist of one main ditch, and cross ones from the shore, to the main ditch, sufficient to carry off the water.

I think well of gravelling meadow lands, and if a favorable time is taken, swamp lands may be seeded down without removing the surface except the prominences.

All these lands will require a top dressing, once in two or three years. I have not tried breaking up a second time, but were inclined to the opinion that they may remain a long time productive with occasional dressings. We are frequently inquired of how deep the mud is ? no matter how deep, mine is from six inches to ten feet deep, and, I know no difference. My lands are not springy ; it may be necessary where they are to dig a narrow ditch along the shore, in addition to the main and cross ditches, but it would be very much in the way when the shore is not spongy.

I would not advise any one to depend too much upon precepts, on this subject, every intelligent farmer will learn more by one or two trials, than from all that has been written upon the subject.

R. A. MERRIAM.

Topsfield, Sept. 27th, 1848.

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## ON AGRICULTURAL IMPLEMENTS.

The Committee on Improved Agricultural Implements, have very little to REPORT upon :

There was presented to the Committee, one ox yoke, made by a lad 17 years old, a farmer by profession, John Whipple, of Hamil-

ton, which was thought by the Committee, to be a very good, substantial article, and well fitted for the use intended and for which the maker was entitled to a gratuity of $1 00.

Quite a variety of agricultural implements were presented, by Parker & White, of Boston, such as ploughs, straw cutters, thermometer churns, ox yokes, flails, hoes and corn shellers, which were very perfectly finished, and very much approved of by the Committee; but inasmuch as there were no special Improvements on former years, unless in the more perfect finish, it was not thought warrantable to give a premium. The Committee thought them entitled to a gratuity of $3 00 for the pains they had taken to bring these implements, and the addition which they made to the Show.

We hope they will continue to add to our shows by the exhibition of such finished and perfect implements. It will probably be as much for their own interests as for ours. There are many, in the community, who have no other opportunity of witnessing the modern improvements in agricultural implements.

Clinton's corn-sheller was thought to be some improvement on other machines of the kind, and the Committee would like to have had further opportunity to test its merits; it attracted considerable attention.

The ox yoke exhibited by Parker & White was much admired, having the advantage of a clasp, instead of a staple, which was thought to possess many advantages over the staple; among them, was the greater strength given to the yoke, and that of readily giving the weaker ox the advantage over his fellow. This yoke required but one set of holes for the bows, and was leaded, which effectually secures the necks of the oxen from chafing.

One word more, in connexion with the yoke of the farmer lad, Is it not desirable for young farmers to cultivate the taste and disposition, which all have, in a greater or less extent, to use mechanical tools? In the course of a farmer's life, he has frequent calls to repair, and make some of the less complicated tools for his use. He has some advantages, which ought not to be lost.

In the first place, he has the timber always at hand; he knows the quality required, and ought to be acquainted with the material itself. He has some leisure hours, rainy days, &c. In some parts of the country, the proper mechanic is not at hand, and it would re-

quire more time and expense than ought to be spared, and more delay.

It requires but little skill to put a tooth into a rake, some more to put a leg into a wheelbarrow, but both ought to be done, instead of throwing the rake aside, or going a mile or two, to a wheel-wright's, with the wheelbarrow. The time saved, therefore, aside from the expense, will more than compensate for any imperfection of the work.

For the Committee,

R. A. MERRIAM.

Lynn, September 27th, 1848.

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## ON FRUITS.

The Committee on Fruits, REPORT :

The exhibition of to-day, both in variety and size, has much surpassed those of former years. The beauty and size of the apples is owing, no doubt, to the assistance rendered to the cultivator, by numerous insects, in removing the surperfluous fruit; and thus not only benefiting the tree, but also improving that which remains. The fact that the Pears from that venerable tree, perhaps the first imported from Europe. (I allude to the Endicott) which were for some time considered of superior quality, convinces us at once of the great advance of Horticulture in the now existing varieties, vastly superior, indigenous to our own country, without reference to the great numbers from abroad. The same may be said in regard to the apple ; for in the year 1630, when John Winthrop with his company of planters reached Charlestown, they found the first orchard in Massachusetts owned by William Blackstone, where originated the Yellow-Sweeting, which, says Hopkins, "is the richest and most delicious of any fruit." (this is supposed to be the High-top Sweeting of our day.) It is needless to add how much has since been accomplished in the culture of this wholesome and valuable fruit ; but notwithstanding so much has been done, there still remains much to be learned in regard to the effect of soil, exposure, and temperature, upon the different qualities and varieties of fruit.

Your committee would briefly say, that it was hardly possible in

the time allotted them, to particularize each variety of fruit, but that choice specimens were shown from the following contributors, viz :

Samuel C. Pitman, Jas. M. Nye, Charles Robinson, Andrews Breed, Jona. Buffum, B. J. Phillips, Otis Johnson, John B. Johnson, George Johnson, Mark Healey, Thomas Bowler, Jacob Purington, Reuben Johnson, Peter Silver, Shadrack Ramsdell, S. D. Cross, H. A. Breed, E. R. Tebbets, Phillip Chase, E. Brown, E. R. Mudge, D. N. Breed, Aug. T. Wellman, Goold Brown, Eben Neal, Thomas Robinson, Ezra Johnson, and Perry Newhall, all from Lynn. F. H. Wade, John Gould and Abram Waite, of Ipswich. Ezra Cleaves and Emerson Shaw, of Beverly. Jacob P. Goodale of Danvers. Moses Pettingel, Wm. G. Lake and P. Bradstreet, of Topsfield. Jas. H. Holmes, Robert Manning, Stephen Driver, Jr., Wm. Stearns, C. T. Putnam and J. M. Ives, of Salem. Dr. Daniel Wardwell of Andover. Josiah Newhall, of Lynnfield. Jona. Fowler, of Salisbury. Andrew Dodge, of Wenham. Henry Vandine, of Cambridgeport.

The following gratuities are recommended by your Committee :

To Otis Johnson, Wm. G. Lake, J. L. Holmes, Ebenezer Brown, Robert Manning, Ezra Cleaves, Stephen Driver, Jr., Chas. F. Putnam and J. M. Ives, two dollars each; to H. A. Breed, Andrew Dodge and Wm. Stearns, one dollar each; to Moses Pettingill and Andrew Lackey, one dollar and fifty cents each; to Jas. N. Buffum, D. N. Breed, E. R. Mudge und Geo. Johnson, Washington's Letters on Agriculture; J. B. Johnson, Mark Healey and Joseph M. Nye seventy-five cents each; J. N. Nye, Andrews Breed, Peter Silver, James P. Oliver, Josiah Newhall, Abram Waite and Samuel Pitman fifty cents each; to Chas. Robinson, Aug. T. Wellman, Jas. Marsh, M. C. Pratt, Jona. Buffum, B. J. Phillips, Philip Chase, Jacob Goodale, E. R. Tebbets, Winthrop Newhall, Reuben Johnson, Jacob Purington, Samuel Boyce, Eben Neal, T. H. Wade, Joseph Adams, Thomas Robinson, Jona. Berry, C. B. Holmes, Elizabeth Page, Joshua Buxton, John Gould and Jona. Fowler, twenty-five cents each.

For the Committee,

JOHN M. IVES.

Lynn, Sept. 27, 1848.

## ON FLOWERS.

The Committee on Flowers, REPORT:

That there be awarded the following gratuities:

For tastefully arranged boquets of grasses, to Miss E. J. Brown, a copy of Washington's Letters on Agriculture; Wm. Frazer, Wm. D. Chamberlain, Mrs. N. Bowler, John Knights, Mrs. Wm. H. Atkinson, Mrs. R. Ingalls, and Mrs. E. R. Mudge, 50 cents each; Mrs. L. M. Atwell, Willard F. Oliver, Geo. Bowler, Eben. Hilton, Clara A. Oliver, Mrs. S. Atkinson, Miss Kimball, Wm. F. Mills, C. F. Mills, J. A. Mills, M. J. Mudge, Mrs. J. L. Shorey, Abigail Alley, Susan S. Ingalls, 25 cents each. For boquets of fresh flowers, dahlias, &c.: Mrs. Francis Putnam, James H. Holmes, Mrs. S. A. Silver, Mrs. E. R. Mudge and Wm. Ashby. 50 cents each; Eunice B. Boyce, Adaline B. Emes, Mrs. S. Atkinson, Miss Hoag, Alice Connor, D. C. Baker, John Alley, 3d, Mrs. Parsons, Miss Tucker, Miss Haddock, Mrs. Jas. M. Nye, Miss R. Kimball, Miss E. Kimball, Miss Jaques, and Miss F. Ballard, 25 cents each. John Knights and Mrs. W. H. Atkinson, 25 cents each, for a pyramid of thistles.

All of which, is respectfully submitted.

THOMAS J. BOWLER,
E. R. MUDGE,
PETER SILVER,
HENRY WHEATLAND,
D. C. BAKER,
FRANCIS PUTNAM. } Committee.

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## ON DOMESTIC MANUFACTURES.

The Committee on COUNTERPANES, CARPETS AND RUGS, recommend the following premiums and gratuities:

Mrs. D. G. Payson, of Rowley, for her knit Counterpane, the first premium, $4 00

Mrs. Elizabeth C. Green, of Ipswich, for silk Patchwork Quilt, containing 3267 pieces, the second premium, 2 00

Mrs. Abigail B. Breed, of Lynn, for her knit Bed Spread, gratuity, 1 00

Lydia A. Breed, of Lynn, for her knit Bed Spread, gratuity, 1 00
Mary A. Webber, of Lynn, for her knit Bed Spread, gratuity, 1 00
Mrs. A. G. Sheldon, of Beverly, Patchwork Quilt, gratuity, 50
Mrs. M. Reynolds, of Salem, Woollen Quilt, gratuity, 1 00
Mrs. Betsey Hunt, of Newburyport, an old lady 89 years old, and a cripple for 12 years, Quilted Quilt, gratuity, 50
Mrs. W. Cross, of Danvers, Patch Quilt, 50
Maria E. Johnson, of Lynn, 10 years old, for Patch Quilt, made between schools in six weeks, gratuity, 50
Harriet E. Stocker, of Beverly, a girl not yet 6 years old, Patch Quilt, 50
Mrs. Lith Lufkin, of Lynn, Patch Quilt, 50
Hannah F. Alley, of Lynn, for Patch Quilt, containing 6930 pieces, gratuity, 50
Mrs. George Spinney, Saugus, Patch Quilt, gratuity, 25
Mrs. Sarah J. Gifford, of Middleton, for Patch Quilt, containing 1750 pieces, 25
Miss Caroline A. Neal, of Salem, 12 years old, for Patch Quilt, containing 1084 squares, 25
Mary E. Fletcher, of Beverly, aged 9 years, for Patch Quilt, containing 2130 pieces, 25
Mrs. Mary Newhall, of Lynn, Patch Quilt, 25
Master A. P. Goodridge, 6 years and 3 months old, for Patch Quilt, made between schools in 7 months, 25
Lydia M. Alley, of Lynn, for Album Quilt, 25

There were 30 quilts exhibited—29 were new, and one was presented for examination by an old lady of this town, to whom a gratuity was given last year.

But two carpets were offered for premium. One a list carpet, cost of the material, $3 00, by Mrs. Edna Little, of Newbury, to whom we recommend a gratuity of $1 00. The other, a large rug mat, or carpet, by Mrs. David Stiles, of Middleton, 14 feet in diameter, a gratuity of $1 00.

There were 32 rugs exhibited, and the Committee recommend that there be awarded:

To Sarah P. Wheeler, of Salem, 2 Rag Rugs, 1st premium, $3 00
Catharine C. Smith, of Lynn, Braided Rug, 2d premium, 2 00
Hannah E. Cleaves, of Beverly, 2 Rag and Jam Rugs, gratuity, 50

Harriet Goodhue, of Beverly, Rag Rug, gratuity 50
Mrs. W. Cross, of Danvers, Braided Mat, gratuity, 50
Frances E. Cross, of Beverly, Rag Mat, gratuity, 50
Miss A P. Burnham, of Essex, Rug, gratuity, 50
Sarah S. Jewett, of Lynn, Rug, gratuity, 50
Mrs. Anna C. Foster, of Beverly, Rag and Jam Rug, gratuity, 25
Elvira Plummer, of Newbury, Braided Rag Mat, gratuity, 25
Hannah F. Wade, of Ipswich, Rag and Jam Rug, cost of material 85 cents, gratuity, 25
Mary Jewett Lynn, aged 82 years, Braided Mat, gratuity, 25
B. W. Allen, of Beverly, Braided Rug, gratuity, 25
M. S. Tuck, of Beverly, Jam and Rag Rug, gratuity, 25
Abigail J. Hall, of Beverly, Rag Rug, gratuity, 25
Miss Hannah Cutler, of Hamilton, Rug, gratuity, 25

For the Committee,

THOMAS B. NEWHALL.

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The Committee on Manufactures of CLOTH AND HOSIERY recommend the following premiums and gratuities:

Mrs. Betsey King, Danvers, 4 pr. Woollen Stockings, 1st prem. $2 00
Mrs. R. M. Jacobs, do 6 do do gratuity, 1 00
Mary R. Kimball, Salem, 3 do do do 1 00
Mrs. Houghton, do Stockings, do 50
Jerusha Rhodes, Lynn, 94 years of age, do do 50
Mary A. Lord, Wrought Woolen Table Cover, do 1 00
E. M. Sawyer, South Danvers, do do do 50
Mrs. H. T. Gerrish, Newbury, Knit Table Cover, do 50
Miss. M. Gerrish, do Wrought Lace Veil do 50
B. Wilson, Woollen Gloves, do 50
Mrs. John Conant, Hamilton, 1 pr. Dog's Hair Gloves, do 50

The specimen of 17 pieces of prints from the Essex Printing Company, were very fine. The styles were chaste, and the colors rich and well brought out. The Committee believing that it is the intention of the Society, to offer its premiums only for articles exclusively of domestic manufactures, recommend that the thanks of the Socie-

ty be presented this Company, for their beautiful contributions to the Show in this department. The show of Hosiery was not as large as we had hoped to see, but the specimens exhibited were very good. The Dog's Hair Gloves were to the Committee a novelty. They would respectfully suggest to those who think it important to have one or more of the cannine race in their families, the economy of obtaining that species where "fleece" can be turned to so good account.

For the Committee,

A. N. CLARK.

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The Committee on LEATHER and ARTICLES MANUFACTURED THEREFROM, beg leave to REPORT that they have awarded the following premiums and gratuities :

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| J. F. Foss, Lynn, for a case of Boots, one pair of Cork Sole, and two prs. Sewed Leather Boots, 1st premium, | $7 00 |
| Jacob Dickinson, Georgetown, Thick Boots, 1st prem. | 3 00 |
| Amos Gould, Wenham, Jack Boots, 2d do | 2 00 |
| J. T. Smith, Ipswich, Pegged Calf Boots, 2d do | 2 00 |
| J. P. Spofford, Georgetown, Crailed Bottom Brogans, prem. | 2 00 |
| Jos. Caldwell, Wenham, Congress Downings, gratuity, | 1 50 |
| Mrs. L. G. Ashton, Lynn, 4 pr. Infant Shoes, do | 1 00 |
| Eliza A. Small, Danvers, Bound Gaiter Uppers, do | 50 |
| Clarrisa E. Whipple, Hamilton, 2 years 7 months old, stitched Brogan Quarter, gratuity, | 50 |
| J. H. Valpey, Lynn, Hats and Caps, gratuity, | 3 00 |
| Souther Blaney, do Lining and Roan Morocco Skins, do | 2 00 |
| Alley, Tapley & Co. do Morocco Skins, gratuity, | 3 00 |
| George French, Andover, Harness, do | 3 00 |

The Committee regret to find so little interest manifested in this department, and so very few specimens exhibited.

S. DRIVER, Jr.
GEORGE J. TENNEY.

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The Committee on MANUFACTURES of METALS, FANCY WORK, AND MISCELLANEOUS ARTICLES, REPORT that there was quite as

good a display as on any former occasion. They were particularly gratified to find that more attention seems to have been directed to the manufacture of articles really useful, than those exclusively ornamental. The following is a list of the gratuities awarded:

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| Wm. A. Atwell, Lynn, aged 11, Miniature View of Lynn Common, | $1 00 |
| Ellen M. Arrington, Lynn, Moss House, | 50 |
| Lydia Rhodes, Lynn, Moss House, | 50 |
| Jesse L. Atwell, Lynn, Miniature Circular Centre Table, | 25 |
| A Young Lady of Salem, Crewel Work, "Young Lord's First Pride," | 25 |
| Susan Dearborn, Lynn, aged 13, Tabouret, | 25 |
| Julia A. Mulliken, Lynn, aged 12, Tabouret, | 25 |
| Lucy W. Smith, Lynn, Tabouret, | 50 |
| Mrs. A. S. Halen, Lynn, Tabouret, | 25 |
| Caroline Buffum, Lynn, Lamp Mat, | 25 |
| Mary A. Dodge, Wenham, Tabouret, | 25 |
| Helen Jones, Lynn, aged 11, Work Bag, | 25 |
| Mrs. S. G. Ashton, Jr., Lynn, Silk Chain Cushion, | 25 |
| Mrs. H. B. Groves, Salem, Crewel Work, | 50 |
| Eliza Proctor, Lynn, aged 14, Vase Tissue Paper Flowers, | 25 |
| Hiram Andrews, Salem, Wooden Flower Vase, | 25 |
| Beulah W. Brown, Lynn, Book Pressed Ocean Moss, | 1 00 |
| Alice E. Johnson, Lynn, Knit Cap, | 50 |
| Jane Nichols, Salem, Bag, &c., knit from American Silk, | 50 |
| Mrs. W. B. Hanners, Lynn, Vases Wax Flowers, | 75 |
| Mrs. Josiah Bennett, Lynn, Moss Flowers, | 25 |
| Mrs. Ambrose Talbot, Lynn, Bead Work Bag, | 25 |
| Mrs. Lydia Tewksbury, Lynn, Shell Monument, | 25 |
| Miss Lydia Lewis, Lynn, Lamp Mat, | 25 |
| George Richardson, Lynn, Vase Tissue Paper Flowers, | 25 |
| Martha Richardson, Lynn, Lace Collar and Bead Bag, | 25 |
| Mary R. Kimball, Lynn, Traveling Bag, wrought between school hours, | 25 |
| Sarah F. Tuck, Beverly, aged 10, Needle Book, Bead Purse, &c. | 25 |
| M. S. Tuck, Beverly, Housewife and Needle Books, | 25 |

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|---|---|
| Caroline Felton, Salem, Bead Bag, | 25 |
| Ellen F. Cleves, Beverly, Housewife, &c. | 50 |
| Mrs. Robert Rantoul, jr., Beverly, Knit Jacket and Mantle, | 75 |
| James H. Nourse, Lynn, aged 14, Crayon Drawing, | 25 |
| L. P. Lewis, Lynn, Painting and Crayon Drawings, | 50 |
| Wm. Ramsdell, Salem, Wire Cage, | 75 |
| Miss Mary H. Lee, Manchester, Carpet Bag, | 25 |
| J. Stanwood Dodge, Manchester, Work Box, | 50 |
| Augusta Hill, Salem, Cushion, | 25 |
| Wm. Wiggin, Lynn, Shoulder Stick, | 25 |
| Fitz Elbridge & Co. Lynn, Cake, | 1 00 |
| Mrs. Balch, Newburyport, Box of Tidies, | 50 |
| Mrs. Wm. B. Hanners, Lynn, Wrought Worsted Easy Chair, | 1 00 |
| Harrietta Proctor, West Danvers, Bead Bag, | 25 |
| Mrs. Porter, Hamilton Falls, aged 95, Needle Book, | 25 |
| Mrs. Avis Keene, Lynn, Specimens Pressed Tea Moss, | 75 |
| H. A. Smith, Lynn, Penmanship, | 25 |
| Miss E. J. Brown, Lynn, Crayon Drawings, | 50 |
| Theophilus N. Breed, Lynn, Specimens Hard Ware, | 2 00 |
| Almira Mason, Salisbury, Painted Window Shades, | 1 00 |
| H. Dwinnel, Danvers, Carved Letter Signs, | 75 |
| Miss Ladd, Lynn, Tissue Paper Flowers, | 50 |
| A. T. Goodwin, Lynn, Lasts, | 1 00 |
| Mrs. Alpea A. Pratt, Lynn, Worsted Shoes, | 25 |
| Mrs. Worcester, Salem, Hair Work, | 50 |
| Susan Boynton, Lynn, Crayon Drawings, | 50 |
| Susan Boynton, Lynn, Vase Tissue Paper Flowers, | 25 |
| George D. Varney, Newbury, Surveying Apparatus, | 1 50 |
| Miss Mary A. Putnam, Salem, Crewel Work Picture, | 25 |
| Mrs. Asby, Newburyport, Crewel Work Picture, Lamp Screen, Moss Work, and Tidy, | 1 00 |
| F. S. Colburn, Ipswich, Model Steam Engine, made while an Apprentice, | 1 50 |
| A. B. Lord, Beverly, Horse Shoes, | 75 |
| Lucy B. Weston, Lynn, Tabouret, | 50 |
| Miss Eliza C. Hudson, Lynn, aged 14, Vase Tissue Paper Flowers, | 25 |

Miss Susan M. Phillips, Lynn, Vase Tissue Paper Flowers, 25
Mrs. Sarah L. Streeter, Salem, Cushions, 25
John F. Tyler, Salem, aged 4½, Patch Work Quilt, 25

FITCH POOL,
HENRY A. BREED,
SAMUEL ADAMS,
WILLIAM ARCHER, Jr.
EBENEZER BROWN,
JAMES R. NEWHALL,
CHARLES MERRITT,
EZRA W. MUDGE.
} Committee.

# AN ESSAY

## ON DESTROYING WEEDS.

BY ANDREW NICHOLS.

The best and most economical means of destroying weeds, shrubs, bushes, briars and all the tribe of plants out of place, which voluntarily seize on our cultivated and uncultivated lands, stealing the fertilizing properties of the soil and manures,—greatly adding to the toils of the farmer, or lessening the products of his labor and his lands,—is a subject of the highest interest to all interested—and who is not? in improvements of Agriculture.

Weeds are either

*Annual*, springing from seeds or bulbs, and existing one season only.

*Biennial*, produced from seed, requiring two years to perfect them and dying the second year.

*Perennial*, the root living an indefinite number of years, while the top dies annually.

And *Shrubby*, where both root and top, at least some part of the growth above ground, lives through the winters of several years.

In order to ascertain the best means of destroying each, the natural history of each, not only of each class, but of each individual species, must be carefully studied. The seed of some of them, it is well known, will lie dormant in the ground for years, till it is stirred for cultivation. Others never trouble us in tillage operations, but prove injurious in grazing and grass lands alone. The most common annuals that infect our tillage grounds, such as Roman Wormwood, Pigweed, Charlock, &c., can be subdued only by the most thorough weeding of the grounds tilled, for a series of years, in no one of which must these plants be allowed to ripen seed on the premises. To young farmers who till their own acres, we would say, declare a war of utter extirmination against the whole race of annual weeds. And although the extra labor may not be fully repaid by the increased crops of a few of the first years, you will be great gainers in the end, if you spend your lives, or many years, on the same homestead. Biennials must be treated in nearly the same manner.

Perennials, such as spread by their roots as well as by seed, require a somewhat different treatment. One of the most troublesome of these, the one most difficult to exterminate, is the dog grass, or whitch grass, (Tricticum-repens.) Ploughing late in the fall, and exposing the roots to frost as much as possible, shading the grounds well by planting corn or other crops very thick, and frequent hoeings, so as to deprive the plants of the benefit of light and air, will do much towards destroying this *tillage evil.* A resolute farmer, who gives no quarter to his enemies, will soon destroy this underground creeping foe.

The Canada thistle, and the slipper, as it is sometimes called, toad flax, (Antirrhinum Linaria) must never be allowed to go to seed or enjoy the light of the sun. Either head them as soon as they peep out of the ground, or cover them with litter, cheap hay, or other rubbish. Roots canuot live long in summer, unless their tops find light and air. For perennials, injurious to pasture lands, and grass crops in mowing lands, such as white weed, butter cups, Flea bane, (Erigeron Philadelphicum,) Ribwort, (Plantago Lancecolata,) &c., occasionally tilling the lands, and high manuring, seem to be the best remedies.

Of the Perennials, approaching shrubs so nearly as to make the definition of shrub applicable to them, yet so unlike shrubs as to be readily mistaken for plants that die down to the ground annually, the most tronblesome in the southern part of the County, in and about Salem, Lynn and Danvers, especially, is the Woodwaxen, (Genista Tinctoria.) This plant greatly enriches the soil, although it allows nothing else to grow thereon; and where it gets possession of land that can be ploughed easily, it does not diminish its value. But it is the ruin of rocky pastures. The Woodwaxen is a tap-rooted plant, giving out shoots only from its crown. Cut off this crown with a hoe, or otherwise, an inch or two below the surface of the earth, and the root perishes. It produces abundance of seed, but it does not seem to remain long in the ground, like some other seeds, in a dormant, but living state, capable of vegetating under favorable influences. Hence ground once thoroughly cleared of it, is very easily kept clear of its occupancy. It may also be easily smothered by covering it in the summer season, for a few weeks, with hay, or any thing that will keep from it light and air. About three tons of meadow hay, for example, will, from experiment made by myself, be

sufficient to kill an acre of woodwax. The hay may be taken off after a few weeks and used for litter, with but little diminution of its value. I should recommend this as the most economical method of destroying it in rocky lands that cannot be ploughed. The usual practice of burning it in the fall, winter or spring, does no good and should be discontinued. Burning it in a dry and hot day in summer, when it is in bloom, will kill the greater part of it. But this cannot be done where it has been burned in the spring or fall previous. There is a wild kind of clover, zigzag clover, (trifolium medium,) which grows in this vicinity, which will overpower and root out the woodwaxen. This fact can be verified by spots of ground in Danvers, where these two tap rooted plants have, sown by Nature, contended for the mastery, and where the clover is victorious. This, however, is where grazing animals have had no access. In pastures where cattle are allowed to feed, the clover would probably be eaten and subdued. I have never known this clover sown for this purpose. With a little labor, the seed might be obtained, and the fact stated is, I think, well worthy the attention of those who have woodwaxen to destroy. Another means of destroying this troublesome plant is pasturing sheep upon it. To do this effectually, the pasture must be overstocked and the sheep be kept hungry. They will then eat up and destroy every spear of it, and if properly managed, kept alive and ready to be fattened on better forage.

Another shrub, or vine, far more difficult to subdue and equally ruinous to pasture lands, is the blackberry vine. This cannot be destroyed by ordinary tillage. On one of my paternal acres, I have noticed the present year blackberry vines growing on a spot where I have known them to be for more than fifty years, notwithstanding the field has been alternately under culture or in grass during the whole of that period. Every piece of root left in the ground, and they run far below the reach of the plough, will send up shoots to the surface, which, if allowed to run themselves there, will live on indefinitely. The plan of smothering this plant, I have never seen tried, but can have no doubt it would prove effectual if continued a sufficient length of time. From its greater tenacity of life, longer time and a more careful watching and covering, it would probably be necessary than for some other plants. Sheep will destroy it if pastured thereon in the same manner they do woodwaxen.

The keeping of sheep, for the purpose in part of keeping pastures

free from blackberry vine, and other bushes, weeds, &c., is not attentively enough considered by the farmers of this county. Asa T. Newhall, Esq. remarks, "that as many sheep as horned cattle may be kept in the same pastures, and both will thrive equally as well as they would were one kind of stock only kept therein, and the increase of briars and other bushes at the same time prevented. Pastures in which *Lamb-kill* (Kalmia) grows, ought perhaps to be excepted. Sheep also will destroy all seedling pines and other young forest trees, and of course whereever it is desirable to convert pasture lands into woodlands they should not be kept therein. But wherever clean unshaded grazing lands are coveted, keep sheep in the same pastures with horses and horned cattle. But fences are not generally sufficient for this purpose, it may be said. Yankees are seldom at loss for expedients. Might not the sheep be so cosseted with cows that they would not leave them? And in many cases improving the fences so as to make them sheep-proof would be good husbandry. And if the worst method must be resorted to, fetter them rather than not keep them at all.

Huckleberry bushes, Lamb Kill, (Kalmia Angustifolia) Bay-berry, and other small shrubs, which so frequently get possession of the most fertile, but rocky portions of Pasture lands, cannot be economically destroyed outright unless they also can be smothered. To kill these bushes, and at the same time make these rocky places, productive and valuable, the best method is to plant them thickly with trees. The locust, willow, and white birch, and larch, would in a few years, amply compensate the owner for the rent of the land, and outlay upon it by its increased value. The locust, and birch are best on dry lands—the willow and larch for springy and low ravines. Other forest trees, such as the red maple, swamp, white oak, and black birch, would do well, mixed with trees of a more rapid growth and earlier maturity. Whenever the trees become sufficiently large, and dense, to exclude the direct rays of the sun, the under brush will die out.

Some patches of most valuable soil in this County, are suffered to remain overrun with the Sweet Flag (Acouis Calamus.) This plant, although the root is of some value as a medicine, is usually worthless to the farmer. It is therefore, an object of some importance, to destroy it. This will be most easily accomplished, by mowing it in the month of July, leaving the usually abundant crop

on the ground, to which should be added coarse meadow hay, or other suitable article, in sufficient quantity to completely smother it, care being taken to cut down every spear that penetrates through the covering

The Ferns, where they cannot be subdued by the plough, should be treated in the same manner, although to do this, would be difficult in some cases, on account of the unevenness of the ground on which they grow. The tall Fern (Osmunda Cinnamomea) grows in bunches, the roots of which compactly woven together, elevates the soil into hills, like the old fashioned hills made around Indian corn, leaving deep holes and channels between them. To cover this plant, therefore, deep enough to smother it, would require many tons of hay to the acre. Whoever contemplates the destroying of useless shrubs and other plants on his lands, must study for himself the peculiarities of their natures, location, and all the accompanying circumstances, of the kind of land, its value when redeemed, and the cheapest method of effecting the object. Over and above the pecuniary recompense, always worthy of consideration, there is ofte a noble pride, an exalted ambition more worthy the admiration of the world, than that which inspires the conqueror of nations, which prompts the proprietor to wage a war of extermination on these vegetable invaders of his territories. The indulgence of this ambition, wherever pecuniary means will justify it, often as effectually weeds out of the mind, low thoughts and groveling desires as out of fields and pastures, the worthless intruders which have been the subject of these remarks.

# AN ESSAY

## ON THE ESTABLISHMENT OF AGRICULTURAL LIBRARIES, BY AGRICULTURAL SOCIETIES.

BY ALLEN W. DODGE.

Among the measures adopted by agricultural societies to promote the objects for which they are instituted, it is not a little remarkable that agricultural libraries should have been so generally overlooked. That they are within the legitimate province of these societies, so that a small portion of their funds might be annually appropriated for their establishment and increase, can hardly be questioned. The only subject for consideration would seem to be, whether the benefits to be derived from such libraries, would justify the expenditure.

It may be said, in the first place, in favor of this enterprise, it will disseminate agricultural knowledge. The object of these associations is to advance the cause of agriculture. To this end, premiums are offered to induce experiments to ascertain things unknown or doubtful, and to excite greater skill in the execution of what is already well understood. The results, as recorded in the Transactions of this Society, are justly deemed as one of its best features, and as giving it a reputation of no ordinary distinction. It is because it thus contributes to the fund of agricultural knowledge, that its labors are so highly appreciated. If so much, then, is done by this Society in diffusing its own knowledge among others, may it not confer an equal benefit on its own members by procuring knowledge from abroad, to be circulated at home? There is propably a vast amount of agricultural information now lost to the reading farmers of the County, for no other reason than that they have not the means to obtain it. Cheap as are books, they cost a large sum in the aggregate, larger than most farmers can afford; and for this reason they have often to deny themselves the advantages to be derived from them. If this be true, would not this Society and kindred associations discharge their high trust, with a wise and liberal forecast, by laying the foundation of a library to supply, free of cost, this demand for agricultural reading.

Such a library would be useful because, in the second place, by furnishing the means for reading, it would serve to increase the number of reading men in the agricultural community. It is now too late a day, when so many agricultural newspapers are taken and read, to urge the importance of having all farmers, especially young farmers, well informed on all subjects that come within the sphere of their occupation. The time is fast coming, if it has not already come, when every farmer should be acquainted with something beyond the practical routine of his own cultivation; when, to be an intelligent farmer, he should be able to give a reason for this and that process by which he obtains different results; to understand processes different from his own and to be able to compare them with his own; and indeed to survey, if not the whole domain of agricultural skill in this and in other countries, at least some of the more striking parts of it, and to draw from such a survey useful suggestions for his own practice.

Besides this advantage, the mere exercise of the mental faculties derived from agricultural reading, is of itself almost a snfficient reason in its favor. The farmer should keep his mind, as well as his plough, bright by use; and how can he use it to more profit than by reading the thoughts of those who have written well on subjects connected with his own occupation? It furnishes not merely an innocent, but an intellectual employment for the long winter evenings, when, if not thus employed, time is too often passed listlessly and unprofitably. What better guaranty can we have than such a library affords, that this Society shall hereafter be able to enlist in its ranks the services of intelligent farmers to direct its management and to sustain, by its reports, the fair fame transmitted to it by a Pickering, a Coleman, and other well read farmers.

In the third place, such a library would give permanency, "a local habitation and a name," to much of the agricultural literature of the day, which, however valuable, soon disappears and is almost lost beyond recovery. As an instance in point, it may be stated that the greatest difficulty was recently experienced in procuring a complete set of this Society's Transactions, for the purpose of having them bound in volumes for the use of the Society. Such a set is now obtained, but the task would be almost hopeless to procure another, pamphlet by pamphlet, one from this source and another from that, without any clue to guide in the search. The volumes of

the Transactions of other agricultural societies, particularly those of the Massachusetts and of the New York State Societies, are very difficult of access. The New England Farmer, enriched as its pages are, by the copious pens of Fessenden and of Lowell, will in a few years be extant only in the libraries of a few reading men. Now if these and kindred publications, with works of foreign authorship, such as Low's Practical Agriculture and Stephens' Book of the Farm, could be placed in such a depository, we should be always sure of their preservation, and we could lay hands upon them just where and when we wanted. As references, such works are often needed, and it is of no small consequence to be able to command them.

In the fourth place, such a library would be a public benefit from the fact that nothing of the kind exists among us. If one wishes to consult books on theology, law, or medicine, or on the natural sciences, there are abundant sources of information on these subjects. There are libraries in the County devoted to these special subjects. But where are the fountains of knowledge to which the student of agriculture may repair, to quench his thirst? They are not to be found here, and he must content himself with the supply that reaches him weekly through the agricultural newspapers, and from the annual flowings of the Society's volume of Transactions, including perhaps, the little rills that percolate through the pages of the Old Farmer's Almanac. Is it not a reproach to farmers that, as a class, they are not more alive to the importance of supplying this deficiency of the means of information on their own peculiar business? The means—the books—exist and are to be had; but where are they to be found in any number collected together and accessible to all?

Much of late has been said in speech and in print, in legislative halls and agricultural assemblies, of the importance of establishing agricultural schools. The attempts, however, which have been made to found them, have hitherto in this County proved abortive, and to some minds, they appear to be uncalled for, or at least of doubtful utility. Without expressing an opinion of their feasibility, if properly organized, or of their usefulness, if rightly conducted; I would ask if the want, which such schools are intended to supply, a more thorough education in the principles and practice of agriculture, might not in part be supplied by agricultural libraries? The young

man labors in the field—his mind is inquisitive—give him the proper instructors, whether books or professors, and he will obtain the desired information. Where there is a will, there is a way, and most true is this of an ardent mind in the pursuit of knowledge. To such a mind, open the doors of your library, and you open to it the resources of wisdom and experience, of theory and science, in matters of agriculture, for which now it may knock and knock in vain at the door of any and every other library in the County.

As connected with county agricultural societies, a library will, it is believed, be a new feature, and if the reasons here adduced in favor of it are conclusive, a bright and useful feature. It will be an advance upon what has already been done by these institutions, in exciting a laudable spirit of enterprise, and high achievement in the cause of agriculture. Complaints are sometimes made—and from high authorities—that agricultural societies have accomplished their mission—that premiums for large crops and fat animals, are rewards only for doing that which has time and again already been done; and that thus little progress in agricultural knowledge and skill, is in fact made by means of these societies. The opinion that agricultural societies have done all the good they can do, even by the continuance of the offer of the old premiums, may be justly questioned, for the reason that but a small part of our farmers have yet reached the point, when they could be successful competitors for these premiums. In the meantime, why not avail ourselves of other means of progress, simultaneously with the offer of premiums? Why not advance a step beyond the ordinary instrumentalities, by establishing a library of useful works on agriculture? Not only would this be a new vantage ground gained, but it would open the way for further progress. By enlarging the sources of knowledge, and, as is presumable, knowledge itself, among the farming community, would it not lead necessarily and directly to a higher standard of excellence in agricultural skill, and to earnest and intelligent efforts to attain to it? If, as the poet says,

To know ourselves diseased, is half the cure;

so, to learn our deficiences in agriculture by careful study, not only of the skill and success of other farmers, but of the processes by which their results was obtained, and the reasons of such processes, would surely teach us the folly of old errors, and the means of correcting them.

Objections may doubtless be raised to the establishing of such libraries as are here contemplated. Some of them have been glanced at, and attempted to be answered, in the preceding pages. There are but two others that occur to me as having any great weight. And first it may be said that such libraries, if designed to instruct young farmers, will entirely fail of their object; that agriculture, being a practical art, must be learned by actual practice; and, to learn it well, books can never be substituted in the place of personal observation and experience. The truth of this latter opinion is fully admitted; but it may well be questioned, whether as guides in understanding the various objects and operations of agriculture, books may not afford to beginners the most valuable assistance. "Books on farming," says Stephens in his Book of the Farm, "to be really serviceable to the learner, ought not to constitute the arena on which to study farming—the field being the best place for perceiving the fitness of labor, to the purposes it is designed to attain—but as monitors for indicating the best modes of management, and showing the way of learning those modes most easily. By these, the practice of experienced farmers might be communicated and recommended to beginners. By consulting those which had been purposely written for their guidance, while they themselves were carefully observing the operations of the farm, the import of labors—which are often intricate, always protracted over considerable portions of time, and necessarily separated from each other—would be acquired in a shorter time, than if left to be discovered by the sagacity of beginners."

It may also be said in answer to this objection, that those who consult agricultural books, while their minds are plastic and their habits forming, will be far more likely to improve upon the practice of their fathers, than if they only followed them in their routine of husbandry. It is well known with what facility a young man adopts as the best, the modes of farming that are practised on the homestead, and with what pertinacity he adheres to them in all after life. Hence it is that farmers, as a class, are so slow not merely to make innovations, but to adopt real improvements. The fault is not that they follow the ways of their fathers, but that they follow them blindfold, and with a sort of undeviating exactness, amounting to veneration. To the youth who is ambitious to attempt nothing beyond what his progenitors have accomplished the old cart-ruts worn by them through long generations, are vastly safe and convenient to travel in. But it

is believed that in farming, as in other pursuits, something new and valuable will from time to time be discovered. And it is by enquiring minds and enterprising hands, that these discoveries and improvements are to be effected. Why then should not our young farmers have the facilities for the exercise of their ingenuity—the incentives to rouse them to exertion, and the guides to direct their pathway to excellence? For this purpose agricultural journals and newspapers are efficient helps; but they are not the only helps, nor do they treat so fully on the various subjects connected with agriculture, as may often be desired. To the investigation of some of these subjects, men competent to the task have devoted the labor of years, and have given to the public the results of their labors in invaluable treatises. Let such treatises be accessible to the young farmer who is disposed to study them, and the good effects will hereafter be witnessed in carrying into practice the new and useful suggestions to be gleaned from them.

It may be objected, secondly, to the establishment of libraries by agricultural societies, that the benefits proposed to be derived from them proceed on the ground that a large part of those already engaged in farming will avail themselves of them, while there will be in fact but a comparatively small number. The objection is doubtless entitled to consideration, but the only way in which it can be properly tested, is by actual experiment. It is the same objection that has been often urged against the forming of agricultural societies themselves, where none before existed; and as often, nearly, as these societies have been organized, the objection has vanished, like mist before the sun. The aversion of experienced farmers to consult books on agriculture, is unquestionably most prevalent; and equally true is it that it will continue to exist so long as no systematic effort is attempted to overcome it. The best works on agriculture and subjects connected with it, must be placed within their easy reach, and they invited to make a free use of them. Our own Commonwealth has done something te the accomplishment of this object, by causing reports on some of these subjects to be prepared by competent hands and distributed throughout her boundaries. And yet how small a proportion of her farmers have ever examined one of the most valuable of these reports, the report, by Dr. Harris, on the Insects of Massachusetts injurious to vegetation? Is it not in part because it has never found its way into their hands?

And would not a library, like that here contemplated, be the means of conveying this, as well as other valuable works, to many farmers, who would not otherwise be able to obtain them?

But should only a few farmers repair to your library, what then? Is it not worth the expense to give to these few the means of information? Will these men, men of reading and reflecting habits, be likely to hoard up the knowledge they thus acquire; or will they not rather dispense to others the information derived from this source, either by conversation or the example of an improved husbandry? It is thus that most of the improvements in farming make their way into general use; not by any new idea, suddenly promulgated and as suddenly adopted, but gradually and almost imperceptibly, as they are commended to others by the successful practice of a few intelligent and enterprising men. Place in every farming community but one reading, reflecting and go-ahead farmer, a Buel or a Phinney, and the influence of his superior knowledge as developed by his husbandry, will show itself after a time among its whole farming population. If then the advantages of these libraries should be in the first instance, shared only by a few, it would not necessarily constitute a sufficient objection to their establishment.

A small number of books, judiciously selected, would suffice for a beginning, and it would soon be ascertained whether or not an increase were demanded. Let the experiment be fairly made; let the farmers know that it is for their special use and enjoyment; let them know that it requires no competition, nor the winning of a premium to share in its benefits; that it is free to every member of the society, and to all alike;—and then it will appear whether there are farmers who have a taste for reading, and a desire for the acquisition of knowledge, and who can find the time, however pressing their labors, for this agreeable and profitable employment.

# AN ESSAY

## ON THE IMPROVEMENT OF WET MEADOWS AND SWAMP LANDS.

BY TEMPLE CUTLER.

Perceiving that the Trustees take a very lively interest in the reclamation of Wet Meadows, and Swamp Lands, I am induced to attempt to give my aid to this laudable enterprise. It is a subject that should call forth the attention of practical farmers, for there is none which holds out to them, individually, more certain prospects of ample returns for money and labor expended. It should, also, command the attention of our scientific agriculturists, to show us the qualities of the component parts of such soils, and of the proper ingredients to mix with them to bring their latent valuable qualities into action.

Such lands, to which the adjoining and surrounding uplands have been for ages tributary, by the washing of every rain and melting snow, abound in this County, and yet remain waste lands, and almost totally unproductive. Every little tributary rivulet carries to thom some of the topdressings that may have been applied to these uplands by the hand of man, as well as by nature, and there they remain sunken in these bogs; and the art of man is required to bring their rich and valuable qualities into action, and make them productive.

The first great and important point to be attended to, is thorough *draining;* this is the great desideratum,—no one may expect complete success in attempting to reclaim wet, or bog meadows, or swamps, without first sufficiently draining them; and unless this is practicable, no one should with confidence attempt the enterprise. It is on this point many have failed of success. They may, indeed, for one or two years, obtain a tolerable crop, but land not fully drained, even with all its top dressings of gravel, of loam, of soil, or of good manure, will soon go back to its natural state, producing little besides its natural wild grasses, and will be entirely unfit for any kind of cultivation. The first great object then should be to ascertain if the land in view can be drained; and according to my obser-

vation, there is not in our County much land, that may not be well drained, if right measures are taken; but the draining of some pieces of meadow is far more expensive than others, and this should be the first item of expense, to be taken into the calculation, and in general the first operation to be performed.

Much of the land I refer to, which abounds in our County, and many other parts of the state, are runs, or narrow strips of land in vales, where water seems to ooze along, and by stealth saturates the ground, and forms a quagmire which must be drained before any other operations can be performed. If there is a fall sufficient for water to run, no one need hesitate to commence the operation of draining. The soil is generally of a kind of loose peat, to the depth of from two to many feet. If the growth is trees, they are not thrifty while it remains flowed, or in its quagmire state, and such land is not profitable for a growth of fuel; the trees must be taken off root and branch, and this is more easily performed on peat ground than some may be aware. The roots of some kinds of trees, and generally all kinds on such land, do not run deep, but spread on the surface. Cutting off a few roots at a distance from the body by a stroke or two of the axe, and affixing a rope near the top to sway them over, one man cutting such roots as seem to hold on, in a few moments a tree may be brought to the ground, with a thin sheet of the top of the soil turned up. The tree may then be easily managed, and freed from most of the soil attached to the roots. Some practice cutting the trees down near the ground, and then removing the stumps by various ingenious expedients, or with machines made for that purpose. But I believe the former the most expeditious, and cheapest method, where the soil is suitable for its performance, although laboring men enough may be found, who will clear such grounds of all the stumps and roots, for the fuel they make. When the ground to be reclaimed is covered with bushes and briars, not worth saving for fuel, the ground should be burnt over and all humps and hassocks smoothed off, and when the meadow is drained, and in dry weather, piled and burnt to ashes, and the ashes spread on the ground, which is one of the best of top dressings.

To perform the work of draining, dig a large ditch in the centre, or lowest part of the meadow, beginning at the lower end, where there must be an outlet for the water. This ditch, should be about four feet wide at the top, and about two feet at the bottom, dug down

to the hard pan, which in such land is generally from two to four or five feet deep, and composed of hard sand, often inclining to clay, which is impervious to water. This is the great conductor of all water from the land, or is a reservoir to hold it, where the descent is so small as not to carry it all immediately off. Then cross ditches made shoal and narrow, tapering to the bottom, about four rods, and sometimes only two rods apart, (where the springs are abundant,) running crossway to the main ditch. In most instances, and where the cold springs flow in from the upland, marginal ditches (between the meadow and upland) are required, and absolutely necessary to take off this water, and of more importance than any of the ditches. But where the water from the hill sides comes only on the surface of the ground, it runs over the meadow, and makes an irrigation that enriches it, greatly promoting the growth of the grass. It will often be seen, that in the shallow cross ditches, where water runs in them from the upland, forming an irrigation, a thick set grass, called blue grass, grows in abundance, and is an excellent kind. In some instances, deep ditches should be interspersed among the cross ditches to take off the occasional springs; these ditches, if convenient, should be stoned up and covered. These cross ditches, form beds, which should be raised in the centre between them, by throwing the mud from the ditches and sides into the middle, or if ploughed, commence in the centre and back furrow to the sides, which will raise it sufficiently.

If such a meadow as I have described could be ploughed, it would be best so to manage, and to plant it with potatoes or corn, or sow it with rye, and grass seed at the same time, or lay it down, sowing grass seed alone, in dry weather in August, or September, which I think better than to sow later, as the crop of grass will be far more abundant the following season; or, it may be sowed late in the fall, and even in the next spring very early, but I think the chance by the last methods is by no means so favorable. But before any thing of this is done, a top dressing of coarse gravel of the depth of two inches will be necessary, and will have an astonishing effect. Sand will answer the purpose, and loam is better than mere sand, but gravel better than either. A top dressing of lime, or ashes on the gravel or sand, I think may well pay the expense, or a compost with lime still better. Yet the effects of mere gravel or sand, I think would astonish any one who has not before experienced

the trial of it, producing an abundant crop of grass. The sand, or gravel, seems to correct some acidity incident to such soils, or they supply some principle wanting to them. The precise manner in which these substances act upon the peat soils, and the exact principles each contain, we will not stop now to enquire; let chemists determine these points, but suffice it to say, experience has shown these important results.

It will be perceived, that I rely more on the tests of experience than on theory, but in many instances the one will corroborate the other. Experience has shown that sand, gravel, lime, ashes, &c., are absolutely necessary to produce fertility on peat lands; it is shown as well in hoed crops, as in those lands laid down to grass. These peat lands, well drained, and made smooth by cutting off the protuberances, or humps, and covered with gravel, say 150 loads to the acre, will produce, if sowed, more grass and hold out longer, than that laid down after a hoed crop, and being also well ploughed, with the sward well rotted, where no gravel has been spread. It seems by these results, that the theory proves true, that the alkalies supplied by the substances I have mentioned, render the peat soil almost a bed of manure.

I wish to call the attention of our practical farmers particularly to this subject. I should wish them to ascertain, by actual experiment, the true value of those peat lands, now almost wholly unproductive; I mean not those peat lands suitable for the digging of peat for fuel, such as is firmly bound together by fibres, and make good fuel, for such land, in most localities in our County, will readily sell at two dollars per square rod; and the top being thrown in, where the peat is taken out, will produce in a short time more than double its former value in coarse fodder. I wish them to convince themselves, that they have no lands of comparative value with these, which are often the rich depository of the wash of their other lands. Experiments may first be tried on a very small scale. Many farmers now yearly haul a few cart loads of soil or loam on to some bog near the house, for a garden, and I have never seen any garden spots more productive, bearing the drought better than upland, and good, even in wet seasons, for vines or roots, for culinary purposes.

I have spoken of the various ingredients for spreading on wet lands or peat meadows, such as sand, loam, gravel, &c., as possessing fertilizing qualities, but perhaps they do not, properly speaking,

enrich, for these depositories are riches of themselves, and the applications mentioned, may only correct some acidity, or render the land more retentive of moisture; however this may be, they give powers of production. And it is well known, from various experiments, that such lands do, in some instances, continue to produce from two to three tons of good hay to the acre, without additional top dressing, for six years; there are few instances, I think, of uplands doing this. It is also an encouraging circumstance to any who fear, (on the score of expense,) to experiment on the improvement of these meadows and swamp lands, that we have within our knowledge several instances, where the first crop has amply paid the whole expense of the operation of reclaiming.

If I have succeeded in showing the true, or supposed value of the kinds of wet meadows and swamps referred to, it remains for me to attempt to show the best methods of managing them after draining. Some think best to dig over the land, throwing out the stumps, which it has been found may be done at an expense of from twenty to thirty dollars per acre. But it is found in numerous instances, that the stumps, for fuel, will well pay all the expense of throwing them out. If, then, the expense of getting out the stumps is thus cancelled, and the expense of digging over amounts to twenty dollars or more per acre, it would undoubtedly be much cheaper to plough the ground when practicable, by attaching a pair of wheels to the plough, to remedy the difficulty of driving the off oxen in the furrow, which would be miry, and thus bringing the oxen on to the swarded and harder part of the meadow. Where all parts of the ground have been found too soft for oxen to travel, some ingenious men have contrived the method of fastening a strong rope to the plough, running to the upland, or hard edge of the meadow, and passing through a running tackle, and driving the oxen at right angles with the furrows. The ground I find may be thus ploughed with more expedition than one at first would suppose: the plough will run with a roller attached, or even with only a rolling cutter, without going too deep. Undoubtedly many other expedients which yankee ingenuity could suggest, may be adopted. But there are many tracts of such meadow, which are already free from bushes and trees, where there would be no need of inverting the sod. In such cases, after the land is well drained by main, cross and marginal ditches, it may be covered with one inch only of coarse gravel,

which may be hauled on in the leisure of winter, (when the meadow is also hard with frost,) and spread the following summer, and which will take about 150 loads to the acre, costing as some have found, about ten dollars. Then may be spread on a light top dressing of ashes, or compost manure, costing perhaps as much more. This land may then be sowed down to grass in September, with the usual quantity of seed used on uplands, viz.: one peck of herds-grass, and one bushel of red-top, costing probably $1 75, making therefore the expense of $21 75. We know of instances of land, thus managed, producing for several years more than two tons to the acre, without farther top dressing. Peat meadow land, thus managed, I have always found to give good crops of good hay, much longer with top dressing, than similar lands well ploughed and planted, well manured in the hole, rotted and laid down, without the sand or gravel. This seems to amount to something like conclusive evidence of the great value of these substances on peat lands.

I have spoken hitherto mostly of loose peat lands, for it is with those I have been most conversant. But the field in which we are now engaged, is exceedingly extensive, opening to view a great variety of soils susceptible of great improvements, varying in their texture and composition, and as I have before intimated, composed much of nutritive and decayed vegetable and animal substances. The process by which they may be reclaimed, must be varied according to the substances composing them. Where clay predominates, sand is one of the best ingredients to mix with it. Where sand or gravel prevails, some substances having the adhesive qualities of clay would be best. In some soils that are well drained, and not flowed at any season, compost, and even barn manure may be used to advantage. But I have come to the conclusion, that on most swamp lands, or meadows, manures are not necessary, but the cheaper articles I have mentioned, such as gravel, &c., are not only more economical, but actually better. Improvements by *paring* and *burning* the surface have been attempted in our County with good success, and although so much resorted to in foreign countries, yet has not extensively been practiced here. Such as have undertaken this process have raised fine crops. Some instances of improvements have been seen, where the expenses have exceeded the value of them, in dollars and cents, yet the fancy of the owner may have

been gratified, and the outlay not grudged. Yet, I think it would be wise in those who are to get their living by farming, to exercise their best judgment in this matter, and adopt such methods as will be likely to insure a profitable return. If they make application of theoretic rules, let them examine carefully the component parts of the soil on which they propose to act: the depth and the vegetable materials of which it is composed; the character of the waters which flow on it, and even the nature of the subsoil. It will not be expected that any one can, by anticipation, lay down specific general rules to direct, in all cases, the proper mode of management to be adopted in reclaiming wet meadows; so numerous are the varying circumstances on which we must depend. Yet one unvarying rule must be observed. The land must be well drained and the ditches continued to be kept open and clear. Occasional top dressings must be applied of such substances as have been found to prove most successful. Thus managed, I would aver, that such lands may be kept in good heart much longer, and produce more abundant crops, at far less expense, than uplands generally.

It is a matter of congratulation, that a very increased attention is being paid, of late, in our County, to this subject. A larger number of claims for premiums have been entered this year than usual, and I humbly believe, still farther encouragement would be expedient. It is well known to the Trustees, and the Essex Agricultural Society generally, that many thousand acres of meadow and swamp lands still here remain in their primitive state. But we are still ignorant of the precise extent, and of the various qualities of these lands. If a scientific and practical survey of the meadows and swamps of the County, could be instituted, as has been hitherto proposed in able reports on the improvement of such lands; could the Society do better than by some such means to investigate this subject? Able agriculturalists in former years, have entered into the spirit of the subject. It was the theme and object of the Hon. Timothy Pickering, the first President of our Society,—a man, eminent in the councils of the nation, yet a practical farmer, who knew well the theory of reclaiming waste lands, and whose active mind was ever on the alert to seek out expedients to improve wet meadows.

Having attempted to treat on this subject, as much as possible, in a practical view, there remains various considerations of a general nature, that may be urged in its favor. Among these, the *health*

of the farmer's family and of the neighborhood, is not of minor importance. The draining and otherwise improving of wet lands, adds much to the salubrity of the surrounding air, and thus renders a summer's residence in towns in the vicinity of populous cities more agreeable for men of business, and of leisure, who would purchase estates, thereby enhancing the value of lands in such towns. I know of instances of evident improvement in the health of families, residing near lands that have been reclaimed. The fact, too, that the raising of more grain, more vegetables, more hay, &c., enhances the capital of the whole State or County, and that more people are fed, and made comfortable, by means of such improvements, is also a matter worthy of consideration.

*Dr.* *William Sutton, Treasurer, in account with the Essex Agricultural Society.* *Cr.*

| | | | | | | |
|---|---|---|---|---|---|---|
| 1847. | | | | 1847. | | |
| Sept. 27. | To balance of old account. | | $306 33 | Dec. | By amount of Premiums and Gratuities awarded during 1847, | $564 75 |
| Oct. | To Bank Dividends collected. | | 214 80 | | By expenses paid by order of the Trustees, viz.: | |
| " | To amount received of new members, | | 21 00 | | Exhibition, in 1847, | 151 37 |
| Dec. | To amount of State Bounty, | | 600 00 | | Construction of new pens, | 133 95 |
| 1848. | | | | | Bills for Printing, &c. | 171 72 |
| Feb. 8. | To amount of B. Goodridge's Note, | | 147 05 | | Secretary's Salary, | 50 00 |
| April | To Bank Dividends collected. | | 214 80 | | Postages, | 10 55 |
| | Premiums unclaimed. | | 41 75 | | | 517 59 |
| | | | $1545 73 | | Cash on hand, | 463 39 |
| | | | | | | 1545 73 |

NOTE. *One hundred dollars* has been paid into the Treasury by R. S. Fay, Esq., to be placed on interest, and applied to the encouragement of the cultivation of Forest Trees, &c.

## FUNDS OF THE SOCIETY.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 16 | shares in | Warren | Bank, | cost, | 1596 00 | Notes receivable. | 1318 59 |
| 12 | do | Exchange | " | par | 300 00 | Cash on hand as above, | 463 39 |
| 22 | do | Commercial | " | cost | 1471 66 | | 8620 89 |
| 7 | do | Mercantile | " | par | 700 00 | | |
| 6 | do | Merchants | " | par | 300 00 | Funds on hand in 1847, | 8572 60 |
| 5 | do | Village | " | par | 500 00 | | |
| 3 | do | Salem | " | par | 300 00 | Increase of Funds, | $48 29 |
| 12 | do | Danvers | " | cost | 1171 25 | | |

SALEM, Sept. 29. 1847.

WILLIAM SUTTON, Treasurer.

SALEM, Nov 16, 1848. The undersigned have examined the foregoing account, and statement, and find the same correctly cast and well vouched.

DANIEL ADAMS, } Auditors.
R. S. DANIELS. }

# OFFICERS OF THE SOCIETY.

CHOSEN SEPTEMBER 27, 1848.

JOHN W. PROCTOR, of Danvers, *President.*
DANIEL ADAMS, Newbury,
ASA T. NEWHALL, Lynnfield,
DANIEL P. KING, Danvers,
RICHARD S. FAY, Lynn,
*Vice Presidents.*
WILLIAM SUTTON, Salem, *Treasurer.*
ALLEN W. DODGE, Hamilton, *Secretary.*

## HONORARY TRUSTEES.

| | | | |
|---|---|---|---|
| Frederick Howes, | Salem. | James H. Duncan, | Haverhill. |
| Ebenezer Mosely, | Newburyport. | | |

## TRUSTEES,

| | | | |
|---|---|---|---|
| Lewis Allen, | Danvers. | Wingate Merrill, | Danvers. |
| John Alley 3d, | Lynn. | E. R. Mudge, | Lynn. |
| Jacob Brown, | Ipswich. | Moses Newell, | West Newbury. |
| David Choate, | Essex. | Josiah Newhall, | Lynnfield. |
| Jeremiah Coleman, | Newburyport. | Andrew Nichols, | Danvers. |
| Andrew Dodge, | Wenham. | John Northend, | Newbury. |
| George Hood, | Lynn | Thomas E. Payson, | Rowley. |
| Joseph How, | Methuen. | Gardner B. Perry, | Bradford. |
| John M. Ives. | Salem. | Benjamin Porter, | Danvers. |
| Josiah Little, | Newbury. | Dean Robinson, | West Newbury. |
| Josiah Kimball, | Boxford. | James Stevens, | Andover. |
| Joseph Kitredge, | Andover. | John Stone, Jr. | Marblehead. |
| Elisha Mack. | Salem. | Horace Ware, Jr. | Salem. |
| Royal A. Merriam, | Topsfield. | Richard P. Waters, | Beverly. |

## MEMBERS ADMITTED IN 1848.

| | | | |
|---|---|---|---|
| Richard S. Fay, | Lynn. | George French, | Lynn. |
| Ira P. Brown, | do | Leverett Bradley, | Methuen. |
| Henry B. Newhall, | do | John Tenney, | do |
| Ezra Baker, | do | Washington Gage, | do |
| E. R. Mudge, | do | John Low, | do |
| Ezra R. Tibbets, | do | Choate Burnham, | Hamilton. |
| Charles Merritt, | do | John Whittredge, | do |
| Nathan D. Chase, | do | John Stone, Jr. | Marblehead. |
| Mark Healy, | do | Benjamin P. Ware, | do |
| Daniel C. Baker, | do | Ben. Perley Poore, | West Newbury. |
| John Washburn, | do | Moses Smith, | do |

| | | | |
|---|---|---|---|
| James M. Prescott, | Andover. | Edwin M. Stone, | Beverly. |
| Christopher P. Jaqueth, | do | John G. Walcott, | Danvers. |
| George L. Davis, | do | Andrew Mansfield, Jr. | Lynnfield. |
| Fitzwilliam Rogers, | do | Jonathan Berry, | Middleton. |
| Nathaniel Peters, | do | John K. Cole, | Topsfield. |
| Moody B. Abbott, | do | Richard Dodge, | Wenham. |

NOTE.—A large proportion of these members have been admitted since the annual meeting, and will be credited in the next annual account.

## LIST OF PREMIUMS AND GRATUITIES

### AWARDED IN 1848.

---

| | | |
|---|---|---|
| **PLOUGHING—DOUBLE TEAMS.** | | |
| Moses H. Poor, West Newbury, | 1st premium, | $10 00 |
| Richard Dodge, Wenham, | 2d do | 8 00 |
| John Washburn, Lynn, | 3d do | 6 00 |
| Ira Worcester, Ipswich, | 4th do | 4 00 |
| **PLOUGHING—SINGLE TEAMS.** | | |
| Elijah Pope, Danvers, | 1st premium, | 8 00 |
| Francis Dodge, do | 2d do | 6 00 |
| John Northend, Newbury, | 3d do } divided | 3 00 |
| Moses Pettingill, Topsfield, | 4th do } | 3 00 |
| **PLOUGHING—HORSE TEAMS.** | | |
| William G. Brown, Ipswich, | 1st premium, | 8 00 |
| John G. Walcott, Danvers, | 2d do | 6 00 |
| John Dorr, Ipswich, | 3d do | 4 00 |
| **WORKING OXEN.** | | |
| Mark H. Davis, Danvers, | 1st premium, | 10 00 |
| Jona. Berry, Middleton, | 2d do | 8 00 |
| Ira Worcester, Ipswich, | 3d do | 7 00 |
| Orin Putnam, Danvers, | 4th do | 6 00 |
| Francis Dodge, Danvers, | 5th do | 5 00 |
| Mark Davis, Danvers, | 6th do | 4 00 |
| **WORKING STEERS.** | | |
| William Foster, Andover, | 1st premium, | 7 00 |
| Elijah Pope, Danvers, | 2d do | 6 00 |
| **FAT CATTLE.** | | |
| Perley Goodale, Danvers, | 1st premium, | 15 00 |
| Nathaniel Felton, " | gratuity, | 6 00 |
| David S. Caldwell, Newbury, | 1st premium, | 10 00 |
| Jedediah H. Barker, Andover, | 2d " | 8 00 |
| Jedediah Farnum, Andover, | 1st " | 8 00 |
| John C. Dennis, Marblehead, | gratuity, | 2 00 |
| **BULLS.** | | |
| Hazen Ayer, Salem, | 1st premium, | 7 00 |
| Orin Putnam, Danvers, | 2d do | 6 00 |

| | | |
|---|---|---|
| Thomas E. Payson, Rowley, | 3d premium, | 5 00 |
| Josiah Crosby, Andover, | 4th do | 4 00 |
| Richard Potter, Ipswich, | 5th do | 3 00 |

MILCH COWS.

| | | |
|---|---|---|
| Joseph Kittredge, Andover, | 1st premium, | 10 00 |
| John Allen, Lynn, | 2d do | 9 00 |
| Silvanus Newhall, Lynn, | 3d do | 8 00 |
| A. B. Lord, Beverly, | 4th do | 7 00 |
| John Marsh, Danvers, | 5th do | 6 00 |
| Joseph Allen, Lynn, | 6th do | 5 00 |
| Abner Newhall, Lynn, | 7th do | 4 00 |
| George F. Lord, | 8th do | 3 00 |

MILCH HEIFERS.

| | | |
|---|---|---|
| David S. Caldwell, Newbury, | 1st premium, | 7 00 |
| Ammi Smith, Hamilton, | 2d do | 6 00 |
| Eben Putnam, Danvers, | 3d do | 5 00 |

TWO YEARS OLD HEIFERS.

| | | |
|---|---|---|
| John Low, Lynn, | 1st premium, | 5 00 |
| Moses Newell, West Newbury, | 2d do | 4 00 |
| James T. Haskell, Beverly, | 3d do | 3 50 |
| Josiah Crosby, Andover, | 4th do | 2 00 |

YEARLING HEIFERS.

| | | |
|---|---|---|
| Francis Dodge, Danvers, | 1st premium, | 5 00 |
| Richard P. Waters, Beverly, | 2d do | 4 00 |
| David S. Caldwell, Newbury, | 3d do | 3 00 |
| Richard Hawkes, Saugus, | 4th do | 2 00 |

THREE YEARS OLD STEERS.

| | | |
|---|---|---|
| Daniel Hoyt, Haverhill, | 1st premium, | 7 00 |
| John B. Jenkins, Andover, | 2d do | 6 00 |
| William Foster, Andover, | 3d do | 4 00 |

TWO YEARS OLD STEERS.

| | | |
|---|---|---|
| Jacob Farnham, Andover, | 1st premium, | 6 00 |
| " " " | 2d do | 4 00 |
| " " " | 3d do | 3 00 |

YEARLING STEERS.

| | | |
|---|---|---|
| David S. Caldwell, Newbury, | 1st premium, | 4 00 |
| Jedediah H. Barker, Andover, | 2d do | 3 00 |

COLTS.

| | | |
|---|---|---|
| Josiah Crosby, Andover, | premium, | 10 00 |

| | | |
|---|---|---|
| Jacob Farnham, Andover, | premium, | 8 00 |
| Richard Dodge, Wenham, | do | 6 00 |
| John G. Walcott, Danvers, | do | 4 00 |
| Elnathan Dodge, Beverly, | gratuity. | 2 00 |
| Richard Hawkes, Saugus, | do | 2 00 |
| Joseph Kittredge, Andover, | do | 3 00 |
| John Danforth, Lynnfield, | do | 2 00 |

SWINE.

| | | |
|---|---|---|
| Richard Adams, Newbury, | 1st premium, | 5 00 |
| Horace Ware, Jr., Salem, | 2d do | 3 00 |
| John Alley, 3d, Lynn, | 1st do | 5 00 |
| " " " | 1st do | 6 00 |
| Joseph Horton, Ipswich, | 2d do | 3 00 |
| Samuel Hawkes, Saugus, | 1st do | 4 00 |

SHEEP.

| | | |
|---|---|---|
| Elijah Pope, Danvers, | premium, | 5 00 |
| Jesse Sheldon, Beverly, | do | 4 00 |

JUNE BUTTER.

| | | |
|---|---|---|
| Charles P. Preston, Danvers, | 1st premium, | 10 00 |
| Benjamin Boynton, Andover, | 2d do | 8 00 |

SEPTEMBER BUTTER.

| | | |
|---|---|---|
| Nathaniel Felton, Danvers, | 1st premium, | 10 00 |
| Charles P. Preston, Danvers, | 2d do | 8 00 |
| Benjamin Boynton, Andover, | 3d do | 6 00 |

CHEESE.

| | | |
|---|---|---|
| William Marshall, Essex, | premium, | 8 00 |

AGRICULTURAL IMPLEMENTS.

| | | |
|---|---|---|
| Parker & White, Boston, | gratuity, | 3 00 |
| John Whipple, Hamilton, | do | 1 00 |

MANAGEMENT OF FARMS.

| | | |
|---|---|---|
| Leverett Bradley, Methuen, | 1st premium, | 25 00 |
| Henry B. Newhall, Lynn, | 3d do | 10 00 |

RECLAIMED MEADOWS.

| | | |
|---|---|---|
| Leverett Bradley, Methuen, | 1st premium, | 20 00 |
| Stephen Osborn, Danvers, | 2d do | 15 00 |
| Richard Dodge, Wenham, | 3d do | 10 00 |
| Royal A. Merriam, Topsfield, | 4th do | * |

GRAIN CROP.

| | | |
|---|---|---|
| John Hathaway, Danvers, | premium, | 8 00 |

*Colman's European Agriculture.

ROOT CROP.

John Peaslee, Danvers, premium, 6 00

FATTENING SWINE.

Francis Dodge, Danvers, gratuity, 5 00

NURSERY OF FRUIT TREES.

Samuel C. Pitman, Lynn, 1st premium, 10 00

AGRICULTURAL ESSAYS.

Andrew Nichols, Danvers, premium, 10 00
Temple Cutler, Hamilton, do 10 00
Allen W. Dodge, Hamilton, do 10 00

| | | | |
|---|---|---|---|
| By the Committee on | | Fruits, | 35 50 |
| do | do | Flowers, | 13 75 |
| do | do | Rugs, Carpets, and Counterpanes, | 27 25 |
| do | do | Cloth and Hosiery, | 8 50 |
| do | do | Metallic and Fancy Articles, | 32 75 |
| do | do | Leather, and Articles of Leather, | 30 50 |
| | Total, | | $741 25 |

ALLEN W. DODGE, Secretary.

Hamilton, December 26th, 1848.

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## PREMIUMS OFFERED.

The list of premiums offered for 1849, will be found in the printed show bills. They are nearly the same as those of former years, with an addition of one hundred dollars premium on Forest Trees, the donation of Richard S. Fay, Esq.

The Exhibition of the Society will be held at Salem, on THURSDAY, the twenty-seventh of September next.

# INDEX.


Mr. Newhall's Address, - - - - - 3 to 19
Hints for the Consideration of the Trustees - - 19 to 25
Report on Forest Trees, - - - - - 25 to 35
" " Fruit Trees, - - - - 35 to 36
Statement of Samuel C. Pitman, - - - 36 to 37
" " William G. Lake, - - - 37 to 38
Report on Grain Crops, - - - - - 38 to 39
Statement of John Hathaway, - - - 39
Report on Root Crops, - - - - - 40
Statement of John Peaslee, - - - 40 to 41
" " Aaron C. Proctor, - - - 41 to 42
Report on Comparative Value of Crops, - - 42 to 48
" " the Dairy, - - - - - 48
Statement of Charles P. Preston, - - - 49
" " Benjamin Boynton, - - - 49 to 50
" " Nathaniel Felton, - - - - 50
" " William Marshall, - - - 51
Report on Fattening Cattle and Swine, - - 52 to 53
Statement of Francis Dodge, - - - - 54 to 55
Report on Fat Cattle, - - - - - 55
" " Swine, - - - - - - 55 to 57
" " Colts, - - - - - - 57
" " Bulls, - - - - - - 58 to 59
" " Working Oxen, - - - - 59 to 60
" " Steers, - - - - - 60 to 61
" " Heifers, - - - - - 61 to 62
Statement of D. S. Caldwell, - - - 63
" " Ammi Smith, - - - - 63 to 64
" " Eben Putnam, - - - 64 to 65
Report on Milch Cows, - - - - - 65 to 68
Statement of Joseph Kittredge, - - - 68 to 69
" " Sylvanus Newhall, - - - 69 to 70
" " A. B. Lord, - - - 70
" " John Marsh, - - - - 70 to 71
" " John Allen. - - - 71
" " Abner Newhall. - - - 71 to 72
" " G. F. Lord, - - - - 72
Report on Ploughing Double Teams, - - - 73
" " " Single Teams, - - - 74
" " " Horse Teams, - - - 75
Report on Farms, - - - - - 75 to 77
Statement of Leverett Bradley, - - - 77 to 78
" " Henry B. Newhall, - - - 78 to 79
Report on Improved Meadows, - - - - 80 to 82
Statement of L. Bradley, - - - 82 to 83
" " Stephen Osborn, jr., - - - 83 to 85
" " Richard Dodge, - - - 85 to 87
" " R. A. Merriam - - - - 87 to 89

Report on Agricultural Implements, - - - 89 to 90
" " Fruits. - - - - - 91 to 92
" " Flowers, - - - - - 93
" " Domestic Manufactures, - - - 93 to 95
" " Cloth and Hosiery, - - - 95 to 96
" " Boots and Shoes, - - - - 96
" " Fancy Work. - - - - 96 to 99
Essay on Destroying Weeds, - - - 100 to 104
" " Agricultural Libraries, - - - 105 to 112
" " Improving Meadow Lands, - - 112 to 119
Treasurer's Statement, - - - - 120
Officers of the Society, - - - - 121
Members admitted in 1848, - - - - 121 to 123
Premiums Awarded in 1848, - - - 123 to 127
Index, - - - - - - 127 to 128

# TRANSACTIONS

OF

# THE ESSEX

# AGRICULTURAL SOCIETY,

# FOR 1849.

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PUBLISHED BY ORDER OF THE SOCIETY.

DECEMBER, 1849.

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BOSTON:
PRINTED BY GEORGE R. CARLTON.
1849.

# ADDRESS

## BY ASA T. NEWHALL.

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Mr. President and Gentlemen:

Another annual revolution of the seasons has brought us together to celebrate the thirtieth anniversary of our society. Our present prosperous condition *as* a society, and the abundant crops of our *early*, and the prospect of the *later* harvest, notwithstanding the severity of the drought for a short season, demands from us the tribute of grateful acknowledgment to the beneficent Author of all our mercies, who has caused his sun to shine and his rain to descend upon our fields and meadows, blessing and rewarding the labors of the husbandman.

The great degree of health that has prevailed amongst us the present season, when many of our neighboring towns and cities have been visited by one of the most alarming and fatal diseases known in our world, calls upon us to ascribe thanksgiving and praise to the great Preserver of man, who holds in his hands the keys of life and of death.

But while it is fit and proper that we should rejoice in the smiles of a kind Providence, that has permitted so many of our members to meet on this occasion, for mutual congratulations, for the success which has attended the efforts of our society, for the promotion of agricultural improvements, and to exchange our views, and to communicate to one another the result of different modes of farming, we feel most deeply impressed with the loss we have sustained by the recent death of one of our most learned and useful members.

It is known to all of you, that since the last meeting of the board of trustees of this association, it has pleased the All-wise Disposer of events to remove by death him who had engaged, previous to his leaving for Europe, to address us on this occasion—the Rev. Henry Coleman—a man long endeared to us all by his many amiable qualities, social disposition, and exemplary virtues; and held in especial regard and esteem by us, for his generous exertions and highly valuable services in that cause whose advancement and prosperity we

are now assembled to encourage. I am aware that it will not be expected that I should attempt his eulogy. That sacred task belongs to *other* and *abler* pens—to those better qualified, by similarity of talents and pursuits, to set forth in worthy phrase, and just discrimination, the eminent endowments, exalted faculties, and distinguished qualities of his mind and heart. But in justice to *your* feelings and *my own*, I could not pass by, unexpressed, the sincere tribute of affection and respectful regard which is present in our thoughts, and swelling in all our bosoms, towards one so truly beloved while living amongst us, and so deeply lamented now taken from us by the cold hand of death. Had I the ability, here is not the time or the place to dwell upon the innumerable and unrecorded acts of domestic kindness and cordiality in the private circle of his family love and endearment. There, in that sacred retreat, the heart's bitterness can be known only to those who feel it. And aught, save our sympathies in their bereavement, and our prayers for their solace and comfort, might seem intrusion. Those wounded hearts we would fervently commend to the soothings of time, and the sublime consolations of our holy religion. Neither would I presume to enter the elevated walks of his peculiar profession. His brethren in the ministry, in the pulpit and by the press, are bearing their united testimony to his rare endowments, and eminent qualifications for his high and holy calling in the ministry. In the broad field of his exertions and achievements for the promotion of agriculture and its kindred arts, both in this country and in Europe, his own publications will be a lasting memorial of his diligence and talents, while they will associate his name with the benefactors of our race, and carry it down in grateful remembrance to all coming generations.

As a friend, a neighbor, a citizen, and a farmer, Mr. Coleman was very generally known, highly esteemed, and sincerely beloved by the inhabitants of the County of Essex; and more especially by the members of this association, whose festival has here assembled us together. To his extensive knowledge, practical skill, zealous interest and indefatigable exertions, in the cause of agriculture, in its different branches, this society is deeply indebted for its existence and success.

By conversation, by advice, by example and by his pen, he contributed, and effectively, to its influence and prosperity, while he remained one of us; and the most painful feeling now pervading

our hearts, and saddening our spirits, is, that we shall see his face no more, nor hear his voice in our assemblies, and anniversaries.

He is not here to-day to instruct and edify us, by his eloquence, or his experience. He will meet us no more on earth forever. His work is accomplished, his labors are ended, he is gone as we trust to the enjoyment of a higher life in a better world.

We have also been recently called to grieve, for the loss of one of the most intelligent and efficient farmers in the county of Middlesex; the Hon. Elias Phinney, of Lexington.

Mr. Phinney as a practical farmer, and one who made farming a creditable business, had no superior, if he had his equal, in the Commonwealth. He has done much to improve our stock of neat cattle and swine. By his kind attention, as the agent of the Massachusetts Society for the promotion of Agriculture, we now have in our County, a fine Ayershire animal for the improvement of our Dairy stock, in relation to which he has been quite solicitous that our good farmers in Essex County should give the experiment a fair trial.

He has left to the agricultural community a rich legacy in his communications of experiments, and success in farming. But he also is gone to the land of his fathers, from whence no traveller returns.

But "we a little longer stay," and we must turn our minds to the duties and labors that now devolve upon us, however humble the lot or limited the talents assigned us by the great Proprietor of our lives, who requires us to be faithful in the occupation of what he bestows, and will not hold us answerable for that which we have not received.

I most deeply regret that some one of the many learned as well as experienced farmers among us, had not been selected, to have supplied the place of our deceased brother, instead of myself. For when I take a retrospective view of the doings of the Society for the last thirty years, and consider who have preceded me—the Pickerings the Saltonstalls, and other learned and eminent men, I am convinced that anything that I may offer you, will be like a barley cake after wheat loaves. But having put my hand to the plough, I cannot look back ; I must therefore turn my furrow as best I may.

The agriculture of the County of Essex, and of our state, for some two or three generations after our fathers secured titles to their farms, had erected their buildings and cleared a field for grain and

vegetables, set out orchards and cut away the beaver dams, that flowed many of our meadow lands, on which they afterwards raised fodder for their cattle, remained about the same.

It is true they improved their homesteads, by erecting better buildings and better fences, but the sons would plough the same, and generally only the same fields that had been ploughed by their fathers; and not being acquainted with the proper mode of cultivating the soil, so as to have continued its productiveness, very little improvement was made in farming. It was thought that only a few patches of the land in our county could ever be made into productive and profitable farms. When we take a look among the farms of the county, and find so large a proportion of them composed of gravel knolls, sand banks, sunken swamps, and wet meadows, (the process of reclamation at that time being unknown,) we have no good reason to condemn their judgment.

It is only about half a century since the first efforts were made to increase our crops of hay by reclaiming wet meadows, and carrying on to our dry gravel lands what was taken from the ditches to drain them. Forty seven years ago this month, a young man in my neighborhood, commenced the improvement of a piece of sunken meadow and swamp land, by draining, and wheeling on gravel and sand, from four to six inches deep. The neighbors unitedly sneered at the undertaking, and some of them inquired of his father whether he permitted his son to trade and do business for himself. The son, however, having succeeded by the third year to raise six tons of timothy and foxtail, on two acres, called upon a son of one who had ridiculed the undertaking, to assist in harvesting the crop. His father on being made acquainted with the result of the experiment, sent one of his younger sons into a swamp and kept him there during his minority. But it was many years before much was done in this branch of improvement; most of our farmers thought that land that could not be ploughed could not be improved.

Some pieces of meadow land of shallow soil, where the plough would run to or near to the hard pan beneath, were cultivated, and made productive of rich grasses, for one or two years only; for although they were sufficiently ditched to take the water from the soil above the hard pan, the subsoil would retain the water so long before it found its way to the drains, rendering the earth at the bottom of the roots of the grass so cold as to reproduce the natural grasses

in two or three years, unless it was constantly warmed with manure, But by using the subsoil plough, breaking up and loosening the soil to a greater depth, the draining may be facilitated.

Our wet meadows and swamps where the mud or peat is from two to ten feet in depth, if capable of being drained at a reasonable expense are of much greater value for reclamation, than those of a shallow soil; as by sinking the ditches to a proper depth, they may easily be made as dry as may be desirable, for the growth of grain vegetables and grasses.

These lands of deep soil, are mostly incapable of being ploughed at the commencement of improvement, and it is bad policy so to do where they will admit of it. The most economical mode to be adopted as far as my experience enables me to speak, is to clear the surface of grasses and bushes, and cover with sand or gravel, sufficient to kill the native growth of vegetation; then manure, and sow with rye and grass if in the autumn, or with oats and grass if in the spring or summer; for if the grain fails, the roots of the rye or oats will strengthen the surface, and aid the grass in getting root.

These lands improved in manner aforesaid, without ploughing, continue productive without any additional expense, much longer than those which have been ploughed; the decomposition of the original growth which has been covered by the top-dressing, furnishing food for the cultivated grasses. By an experiment I made some twenty years since, by the above mode, on one acre, I obtained good crops of hay for eight years in succession, without any dressing; the ninth season, the crop was some less than a ton; it was then ploughed in the fall of that year, and planted the first day of the following June. The sand and peat had become well mixed, was very mellow and easy to till. The acre produced fifty bushels of corn—having one row of potatoes around the margin. The next year it produced about forty bushels of barley.

We have an abundance of these lands as yet, in a state of nature, which if reclaimed and rendered as productive as they might be, and our dry lands sufficiently manured from our peat meadows, and swamps, few if any parts of the state, of the same area, would produce more good hay than our own county.

Our salt marshes which have been a reliable source for stock fodder, have within a few years been thought less of than formerly. The cattle fed upon the hay grown from them have been represented

by a gentleman who stands high in our society, as the successors of Pharaoh's lean kine. The loss of its reputation, as good fodder for cattle has been owing, in my opinion, to its having been fed out before it was fully cured. It was formerly the custom to let our low marsh hay lie in swarth from six to eight days, to make. Recently it has, and I think with more economy, been put up, the weather permitting, in less than half that time, for it is much better to be cured in stacks, than spread upon the marsh, after it is sufficiently dry to keep; but it requires longer time for making. The low marsh hay is not fully made, until it is six months or a year old. If fed out when green, to cows, the milk will taste of it; if to working cattle it will weaken them; but when kept till fully cured, it will make good butter, and support the ox at the plough.

As cattle require a portion of salt, and will not thrive well without it, the cheapest and easiest way of supplying them is to feed more or less with this hay, which will furnish food with the salt. Every farm, within a reasonable distance, ought to contain a piece of these lands.

Our marsh lands have been very much improved by ditching; but the improvement has been attributed to draining, which is generally considered one and the same thing, though very different as respects the effects on salt marshes. By recommending the draining of marshes to improve them, it cannot be expected that those whose lands are already too dry, would think of draining, when, in fact, the high and dryest parts of the marsh are most benefitted by ditching;—as the ditches are filled, or partly so, twice in twenty four hours by the tide, which cools and moistens the dry parts, and renders them productive, increasing the crops more than four-fold.

Although we have doubled, if not trebled, our crops of hay, our pastures have deteriorated. Perhaps not more than half the stock is now pastured in the county, certainly not in this section of it, that there was fifty years ago. This diminution of pasturage is attributable to various causes. In some parts of the county, portions of the pasture lands have been converted into house lots, gardens, and tillage. On many of our pastures the ancient oaks and other forest trees, which were reserved by our fathers for shade and ornament, and were the natural defence of the surface against the scorching and exhausting rays of our summer sun, have been removed.

Another, and perhaps the greatest cause of the deterioration of these lands is owing to our farmers generally having abandoned the keeping of sheep, which are the best gleaners of pastures, after other stock; readily feeding upon bushes, vines, briars and other foul growth that is left by other stock, and which will increase and soon run out a pasture, if left to the occupancy of the cow and horse, without the intervention of sheep or the plough. I am confident that sheep, equal to half the number of cows, may be kept in the same pastures without detriment to the cows, by letting the sheep follow the cows from pasture to pasture; and there is no mode which has been recommended for exterminating wood waxen and other noxious weeds, that destroy all valuable growth of vegetation, that can be adopted for this purpose, attended with so little expense, or perhaps I may say with any profit, as that of feeding with sheep. If the surface is cleared by mowing or burning or both, and fully pastured with sheep, and if so highly stocked as to require some extra feed, the better. In three years the land will be entirely cleared, the soil enriched and fit for the plough, where it is not too rocky, and where it is, it will make good dairy pastures.

A very considerable portion of these lands, in this part of our county, have been permitted, and in some instances encouraged, to grow over to wood, which, owing to the rocks and roughness of the surface being unfit for cultivation, is probably for the interest of the owners, and certainly no detriment to the public, for wood and timber are diminishing in quantity very fast; and the invention of steam will hasten the fulfilment of the Miller prophecy—the burning up of the world, or at least the combustible parts of it.

Some twenty or thirty years since, geologists made a survey, and examined the coal mines in England, who reported that in their opinion, there was coal sufficient at the then present consumption to supply the country for two centuries. The increase of its consumption since has been very great. If the calculation then made is at all to be depended upon, there will not be a coal left in that country one hundred years hence; and it is easily perceived, considering the vast quantities *now* consumed, that if the whole island of Great Britain were coal, it would take but a few centuries to burn it down to high water mark.

Our pastures might be very much improved, undoubtedly, by planting forest trees upon them of different kinds, according to the nature of the soil.

On our dry, gravelly and sandy soils the locust thrives well; and as they absorb the dew that falls upon them, they do not *decrease*, but rather *increase* the moisture of the soil, and the dropping of the foliage, especially the blossoms, which are very rich, greatly increases the fertility of the land. A plantation of these trees upon any of our dry pasture lands of twelve or fifteen years growth, will more than double the feed, and in the course of thirty years the timber and wood will be worth at least one hundred dollars per acre. In making this assertion I speak advisedly, and am ready to prove the facts by a grove I have raised from the seed, and planted out within that time. The grass that grows under the locust is very sweet, and readily eaten by cows or horses.

The expense of raising a nursery of these trees is trifling; the seed germinates well, if the earth is properly prepared; but as *ours* is colder than their native climate, it is necessary to use some artificial heat. Soaking the seed in warm water will answer the purpose, but a better method is to warm the soil by a fire on the surface either before or after sowing.

The willow on low marshy lands will rather improve the grass than otherwise, and afford a large quantity of wood, it being of rapid growth.

Very little has been done in this County about planting forest trees until recently, and I am happy to know that enterprising gentlemen are now making experiments by planting groves of many kinds of our native as well as foreign varieties. On most of the farms in our County there are patches of waste land that might be profitably appropriated to the growing of wood, and by planting trees on the sides of our highways, much valuable wood might be raised, our thoroughfares ornamented and the public benefitted.

Very much has been done in aid of the cultivation of our farms, by the great improvement made in the working tools of our profession.

The plough has been brought to a very great degree of perfection and our farming implements generally, at the present day, are so much better adapted for the cultivation and harvesting our crops, that a much greater amount of labor can be performed, with less expense of muscular strength, than formerly.

Our crops of corn, grain, and vegetables have been greatly increased by the improved mode of cultivation, which has in a great

degree been the fruits of our agricultural societies by collecting and disseminating the results of experiments.

The greatest deficiency of good husbandry of our fields of grain and vegetables, is in permitting the weeds to grow and seed the latter part of the season. The great length of time required to harvest and secure fodder for our cattle during our long winters, and which generally employs all hands in the hay field, permits the weeds to get ahead of the hoe and cultivator, and assert the supremacy, so that many will be discouraged, and give up the contest, as described by the following anecdote.

An aged farmer in the town of Lynn, had a potatoe patch, some two miles from the homestead, and deferring to hoe at the proper time, at last harnessed his horse, took his plough, apparatus, and boy into his cart, and went to the field, for the purpose of ploughing among his potatoes; after unharnessing his horse and unloading his plough, he deliberately walked around the field, carefully inspected it, but returned, harnessed his horse, reloaded his plough, and taking a serious look over the field, with a long sigh, says, "I wish thee well, but I cannot help thee," and returned home. It would be better in many instances to plough in the crop with the weeds, than to permit them to ripen, and shed their seed for a future crop.

As long ago as eighteen hundred twenty-one, premiums were offered for mixed crops of Indian corn, potatoes and bush beans; or any two of them to make a mixed crop, planted in alternate rows or hills. But one premium, I believe, has been claimed, which was for a crop of corn and potatoes planted in alternate rows; the experiment made at that time, by measurement of land and produce, showed that the mixed crop yielded some *nineteen per cent* more, than that which was planted separately. The corn and potatoes planted in this way are mutual helps to each other; the potatoes shading the roots of the corn and protecting it from the effects of drought, and the corn, in the months of July and August, screening the potatoes from the rays of the sun. The crops planted in this way, adding the value of potatoes in corn, yielding from eighty to one hundred bushels per acre.

The crop of corn will be increased by mixing a few grains of a later than the principal kind you plant, as the stocks of the later kind will furnish seed for the late silks of the earlier kinds.

A piece I planted with fifteen different kinds, mixed, yielded a bushel and six quarts on half an acre, more than that planted with one kind only, and weighed two pounds more to the bushel.

But notwithstanding these experiments were made and reported with the doings of the Society, some six years ago, but few I believe have tried them; for our farmers, whatever may be their religious or political creeds, are, as farmers, all conservatives; and their extreme cautiousness generally prevents their adopting any well tested experiment, until they can see grey hairs upon it.*

It has generally been thought by farmers, that the ripest corn and potatoes were the best for seed. But so far as my observation goes, corn gathered soon after it is out of the milk, and is but partially glazed, will vegetate and come up, about two days earlier than that which is fully ripened in the field; and as the most critical time for the growing plant is while it lies buried in the earth, the sooner it is up, the less danger in case of storms and wet weather.

Potatoes, to raise seed, should be planted late in the season, that their growth may be checked by the frost before they are ripe; as the unripe potatoes will produce an earlier and more abundant crop than those fully ripened.

The reports we have had upon manures, the process of making composts, and the different materials adapted for the purpose, the different kinds of manure, and their adaptedness to different soils, leave but little further to be said upon the subject; except perhaps in their application.

After the old mode of manuring in the hill, was succeeded by ploughing and turning it under the furrow, we thought we had secured it from waste, by evaporation, although applied in a coarse state; but in this I am confident we were mistaken. There is no mode by which manure may be applied to land, in a coarse, unbroken state, and be preserved from waste, either by ploughing or harrowing.

* Since this Address was delivered I have found in the Memoirs of the Philadelphia Society for promoting Agriculture, a communication from John Lorrain, Esq., stating experiments made by him on mixed crops of Indian corn and potatoes. He says, "he has frequently planted Indian corn in single rows, eight feet asunder, and dropped single corn two feet distant from each other in rows so as to stand in single plants; when the corn was ridged, potatoes were planted in the clearing out furrows which were filled with rotted dung, and closed by two furrows, backed over the potatoes by the plough. I have had repeatedly forty to fifty bushels of shelled corn, and one hundred to one hundred and fifty bushels of potatoes, to the acre. In weigh, the crop always exceeded the best corn cultivated in the common way. This mode was suggested to me by General Washington, who told me he had great success in it."

The scarcity and price of manure renders it all important to the farmer, that it should be applied, so as to receive the fullest benefit from it. In order to do this, the land should be ploughed, harrowed, and rolled, until it is of fine tilth, and the manure should be made fine, the finer the better; spread, ploughed or harrowed in, when it will be immediately incorporated with the soil, and the crops receive the full benefit of it.

Orcharding, which had been for a great number of years, almost entirely neglected, has for the last twenty or thirty years generally received its full share of the farmer's attention. Sixty years ago there were many old orchards; but very few had been planted for a number of years previous to that time, and there were very few nurseries in the county, except such as had grown up where the pomace from the cider mills had been deposited in heaps. About this time, when planting out apple orchards recommenced, these wild nurseries furnished almost exclusively, the young plants, which after having been set in orchards for a number of years, were some of them engrafted from old trees, which bore the best fruit we then had; but most of the scions being taken from old trees, or old varieties the fruit of the young orchards generally bore the marks of old age, and some of them continued to bear but a few years, although set on young and vigorous stocks. Some varieties are wholly extinct. Of the Nourse's Sweeting, so called, which were plenty in this market about sixty years ago, not one is to be found, although many young trees were engrafted with this variety about that time.

We cannot prolong the existence of any particular kind of fruit, by engrafting from old on to young trees, beyond the natural life of the original tree, or the time it would cease to bear fruit by old age, if living. We must go back to the seed for a new generation.

If I am correct, the importance of budding or engrafting our nurseries from new varieties must be apparent, as an orchard of a variety that is not more than twenty or thirty years old, will last seventy or eighty years longer, than one of a variety of an hundred years old, two hundred years being considered the age of the apple tree. I am aware that there are many who will smile at the idea that a scion taken from an old and placed upon a young tree, continues to number its years. They say that its age is renewed as soon as it is supported by the sap of the young tree—that it has no affinity to the old tree. If so, why is not the fruit changed? If the scion, when

transmitted to the young stock, does not retain the identity of its nature and species, how could it produce the same fruit of the parent tree ?

Mr. President, if the doctrine be true that by budding or ingrafting from older to younger trees, any species of fruit may be perpetuated through all time, then the fatal apple that grew in the garden of Eden, by the same process might have been transmitted to us, and our wives might have been plucking the fruit, and giving it to their husbands.

But it cannot be so. We might as well undertake to renew the age of an old cow by turning her into a new pasture, as the age of any species of fruit by ingrafting from old to young trees. It is true that if the cow was better fed her hair might look more sleek and glossy, but it would not diminish a wrinkle upon her horns.

There is no branch of farming or orcharding where greater improvement has been made than in garden fruits and vegetables. Where a quarter of a century since, in passing over the county we might see occasionally a solitary pear tree in the front yard, and a peach tree at the back door, we now see beautiful gardens of delicious fruit, ornamented with a great variety of flowers ;—one flower only being absent, and that the most precious and delightful in creation—lovely woman ; for our ladies seem to have forgotten or to disregard the fact that in the first garden ever planted on earth, the woman was placed with the man " to dress and to keep it."

The scarcity of good pasturing in our county renders it unprofitable for the raising of stock. It may, however, be for the interest of farmers generally to raise enough for their own use, as by selecting their best calves, the stock may be improved ; and it requires about as much care and labor to wont and acclimate, stock bought from the droves, as to rear them. Our milch cows have been very much improved by crossing with imported breeds, and we have some of the native breeds that are very superior.

The exhibition of swine *to-day*, an animal inferior to none in our country for food, and almost the only one that a poor man can afford to keep, its rapid growth and early maturity soon refunding the outlay of raising, shows us what may and what has been done by selecting and crossing the best of different breeds. They seem to have exchanged their long snouts and crooked spines for broad backs and deep sides.

The variety of the feathered tribe at the exhibition to-day, the cages of fowls, ducks, turkeys and geese, promise well for a rich thanksgiving dinner.

Having passed in a cursory manner over our fields and pastures, through our orchards and gardens, and noticed the improved condition of our domestic animals, I am reminded of an anecdote of the late venerable Timothy Pickering. Something more than twenty years since, I had the honor of being associated with him, on the committee for visiting farms offered for premium. One of the farms we visited was that of Col. Newell, of West Newbury. After we had been over the farm, and had seen the different animals, Mr. Pickering remarked to Col. Newell that having seen all he had to show out of doors, we had better go in and see what the stock was in the house, where we found some fine specimens of the old Anglo-Saxon race, whose ancestor came from England in sixteen hundred and thirty, and settled in Lynn.

As a commendable zeal is manifested by our farmers to improve the different races of animals that perish, perhaps it may not be amiss to refer to those, "one of whom is of more value than many sparrows, yea, than the cattle upon a thousand hills." And to inquire whether we are pursuing a course of education with our children best adapted for the happiness, prosperity and durability of our posterity. Reference has frequently been made in addresses to our society of the propriety and the utility of educating our sons for farmers; but that of our daughters has rarely been mentioned, although the future condition of our posterity depends more upon the physical education of our females than upon all other circumstances. The employments of farmers' daughters generally, until within some twenty or thirty years, was well calculated to ensure a robust constitution and a vigorous mind; but circumstances beyond our control have laid away the healthful spinning wheel and loom into the archives of the garret or some untenanted outhouse, and the dairy and housework have very generally been assigned to hired help, as by our present course of education our daughters must attend school from the age of four to sixteen, eighteen, or twenty years. Fifty years ago the education of the minds of farmers' daughters was almost wholly neglected, while their occupations were such as to ensure bodily health and vigor. But the course and object of education within a few years past has been almost entirely changed. The great

object now seems to be to cultivate, adorn and beautify the mind, to the utter neglect of the growth and strength of their physical powers. "The one ought to be done and the other not left undone." Many of the young ladies who graduate at our seminaries of learning return to their paternal homes, pale, emaciated and enfeebled by constant mental exertion and neglect of physical exercise, so that they are unfit fer wives and mothers, and incapacitated to perform the duties and enjoy the pleasures and comforts of after life.

The history of the early training, educational pursuits and industrial habits of the illustrious women, who have been the mothers of the presidents, governors and other great men of our country, might furnish an interesting subject of inquiry for the matron, the preceptress and the governess. I am satisfied that the result would be, that generally they were what is called in common parlance, working women. The consequence to posterity of parents being inured to hard labor is manifest in the case of the Israelites sojourning in Egypt. They continued there four hundred years, and were subject to hard labor during that time; but they increased so much faster than did the Egyptians, that the King and his court were alarmed, and caused the male children of the Israelites to be slain to prevent the catastrophe they feared. But notwithstanding all their precaution, a son of an Israelitish bondwoman, led old Pharaoh and his host into the sea, and there they were drowned. Although our posterity may escape a watery grave, unless a different course be adopted in reference to the physical education of our children, especially our daughters, they will most assuredly be overwhelmed by the physical powers, the mental vigor, and moral courage of the posterity of those who are now our servants.

As there is nothing appertaining to this world about which parents manifest so much solicitude as the prosperity and happiness of their descendants—no hope or desire so strong for any future earthly blessing as that their children and children's children should keep the inheritance they leave to them, and live near their graves, may we not most devoutly hope that the physical, mental and moral education of our children and their descendants will be such as to enable them to defend their rights and perpetuate the liberties of their country, and to possess, occupy and enjoy the lands that have been moistened with the tears, the sweat, and the blood of our fathers?

# REPORTS, &c.

## I. REPORT ON DAIRY PRODUCTS.

The Committee* on Dairy products were gratified to find so many entries, and such fine specimens of butter. The parcels were entered as required, by the numbers only, and were examined without any knowledge of the persons by whom they were made. The several parcels of June butter were first compared with each other, and the several parcels of September butter likewise. After the opinion of the committee was made up, upon the specimens presented, the several statements were examined and compared. Although there was found to be important differences in the quantities produced in different statements, still there was no sufficient reason to vary the awards as made upon the quality. Some of the statements were found to be not in strict conformity with the conditions on which the premiums were offered; but no material variations were noticed in those of the successful claimants. That no injustice may be done to any claimant, the statements will be published as presented, in connection with the Report. They have been carefully scrutinized, and such of their characteristics as are worthy of special remark will be particularly noticed;—not for the purpose of censuring any one, but in the hope of instructing those who are willing to learn.

The processes of keeping the milk and of making the butter, are so nearly alike, that it would seem all of the claimants had been taught in the same school. It is not strange that this should be so, as they knew before whom their lesson was to be recited. Those modes which had been found most successful in years past, would be most likely to be imitated.

It should be remembered that our premiums are offered "*for the best produce on the farm*," and not simply for the best specimens exhibited.

* John W. Proctor, of Danvers, Joseph S. Cabot, of Salem, Eliphalet Emery, of West Newbury, David S. Caldwell, of Byfield, Jedediah H. Barker, of Andover. The three last named gentlemen only examined the specimens; indispensable engagements necessarily occupying the attention of the others

It is expected of the claimants to state distinctly the amount produced in the month of June ; and also in the *four months* next following the 20th of May. It is highly important that all the particulars in the management, from the first milking of the cow, to the moulding of the butter for the market, should be carefully noted. If these facts could be presented in a Journal form, so that the feed of each week, and the produce of each week, could be distinctly seen and compared, it would be a source of much instruction.

The design of requiring statements for particular periods of time, is, that all statements should have reference to the same period, so that they may with propriety be compared together. If for instance one person takes fifty days from May 20 to July 10, and another 14 days, from June 10 to June 24, there can be no fair comparison between the two. We can easily conceive of such an arrangement of the pastures, and of the feed of the cows, for a period of *fourteen days*, as would show a very different result from what could be produced in *fifty days*. These facts are adverted to, because some of the statements are made in this manner. We want no forced statements ;—we care not how good they may be ; but we want them in the ordinary way ; we want to see the whole truth, without any artificial appliances, We do not want to meet the *dairymaid* in the parlor, arrayed in her silks and ruffles ;—but we want to meet her in the *dairy room*, with a smiling countenance, clean hands, and a neat apron, ready to show how the cream is daily taken off, and how the butter is daily taken care of.

There are many facts in relation to the making of butter, of great importance to be distinctly noted. Instance, from some we learn that the quantity of butter is materially influenced by the manner of milking the cows ;—by being careful entirely to exhaust the bag at each milking ;—*one pint* at the close, being said to be of as much value as *four* at the *commencement.**

It is presumed that there is a certain point of time, after the milk has been set, when the cream can be severed from the milk to the best advantage. We have looked through the statements to ascertain when this is. We find them varying from twenty-four to seven-

*We are reminded of the adroitness of a shrewd fellow on a dairy farm in this vicinity, who was taught his early lessons among the Shakers, in a village of N. H. ; who being permitted to take two quarts of milk daily, for the use of his own family, used to take his pail, and go round, after the cows had been milked, and strip out his two quarts. After understanding the different butter-making qualities of milk, taken at different stages of milking, it was not difficult to find a reason for the movement of this shaker-taught manager.

ty-two hours;—about as definite as the size of *a piece of chalk.* What is wanted, is a rule for the guidance of those who shall undertake to manage the business without having had experience. Without doubt many of these successful butter-makers, have the right rule in their mind,—but have never yet so defined it as to be able to convey it to others. The probability is, the longer the cream remains the more there will be of it; but may it not remain so long as to impair the quality of the butter? This may depend much upon the character of the *place where* and the *vessels in which* it is set. Nearly all speak of setting the milk in *tin pans*;—*how deep* it shall be, whether two, four or six inches, they do not say. All concur in assigning a clean, airy and cool place for the milk to be set in; and all concur in approving of entire cleanliness in all the departments.

What shall be done with the cream after it is collected? Some place it in a bucket in the well; others in pots, in vaults constructed for the purpose. The best position we have noticed, is to have a neat apartment excavated below the ordinary cellar, and there to keep it, until the convenient time for churning. This should be as often as a sufficient quantity is accumulated, to be churned to advantage. The kind of churn, and the temperature of the cream at the time of churning, are both to be considered. It is said a temperature from 60° to 65° is the most favorable. If this be so, it should always be brought to this temperature, before the agitation of the cream is commenced. Crowell's Thermometer Churn is constructed with special reference to this point. It also professes to promote a proper circulation of the air, at the time of churning. Whether this *air movement* is fanciful or real, I leave to wiser chemical heads than my own. The quality as well as the quantity of the butter depends much upon the churning process. When dog days come on, we have frequently heard complaints that the cream was *bewitched* and the butter would not come; when in truth the fault was not in the cream, but in those who managed it.

Many of these little things which a skilful manager of a dairy is accustomed to observe and practice, and which are thought too trifling to be noticed, may in fact constitute the real differences between the making of good and ordinary butter. That such differences do exist, we see exemplified every week. Take for instance, in any of our towns, two farmers, situate side by side, on lands similar; you will find one of these going into market on Saturday, with butter, soft

and greasy, with small particles of butter-milk oozing out of it; while the butter of the other is in neatly formed lumps, hard and regular, of a bright yellow color; the one is slowly sold for *a shilling* a pound—when the other readily commands a *shilling and a half*—from purchasers much better satisfied with their bargains. Why this difference in price, unless it be in the management of the dairy? One of these farmers will be able to thrive and flourish, with painted buildings, and neatly arranged fences;—while the other will have his windows stuffed with rags, and his fences going to ruin.

It is not enough for claimants to say in their statements, that *about* an ounce of salt is applied to each pound of butter; or that it was salted to suit the taste. Such expressions afford no rule for the instruction of others. Tastes may vary as much as hands in weight, or feet in measurement, and the word *about* has too much of the quality of *india rubber* to fasten anything. For example, in the statements before us, there is a variance in the quantity of salt used of *one half*—say from three fourths of an ounce to one and a half ounces to the pound. We are aware that there may be differences in the quality of the salt, and that the condition in which the butter *comes*, may at some times require more salt than at others; and consequently that the judgment of the persons *working it* is to be exercised; but still we think it is in their power to define, how this judgment is to be applied; and this is the very thing we want to be informed about. These little peculiarities which enable good dairy-maids to present the nicest of butter.

On looking over the statements presented, several difficulties occur in instituting a comparison. Some speak of *cows only*; others of *cows and heifers*. Some speak of *old cows*; others of *young cows*. What the fair proportion is which a heifer bears to a cow, we have no certain means of determining; but for convenience sake, we assume that *three heifers* the first season in milk, may be reckoned equal to *two cows*. We are also embarrassed by the fact, that different families may consume very different quantities of milk and cream in the family. Ordinarily we expect to find on a well regulated New England farm, a man and wife, five children, a man servant, a maid servant, and a boy to drive the cows, &c.,—*ten in number*, for whose use the milk of one cow at least shuold be appropriated. There may be variances from this. There may be *bachelors* who take care of their own dairies,—but such care will never be considered as a rec-

ommendation for premium. Although their butter may be *sweet* in the *churn*, ten chances to one, it will be *rancid*, before it comes to the *table*.

Another embarrassment, and one that should be remedied by the Trustees themselves, is in the *variances of time* for which the statements are made. Some we notice from May 20th, to July 5th. Some from June 1st to July 9th. Some from May 20th to Sept. 25th. Some for 14 days only in June—periods that cannot accurately be compared with each other. Such statements not only vary from the rule prescribed, but they present also insuperable difficulties in the way of just estimates. We have been thus particular in enumerating these, that claimants may understand, if they would expect others to judge *rightly* of their claims, they must *begin right* in their statements. It is not enough for them to say, that the offer of the premium is not made exactly as it should be; when they present their claims, they assent to the propriety of the offer.

We present in a Tabular form, an abstract of the several statements, supplying deficiencies by the *best guesses* (exercising our privilege as Yankees) in our power to make.

| No. | Name. | Residence. | Cows. | June, av. to a cow. | 4 months av. to a cow. | Total |
|---|---|---|---|---|---|---|
| 1 | JOHN STONE, JR., | Marblehead. | 4 | 45 lbs. | 155 lbs. | 620 lbs |
| 2 | DANIEL PUTNAM, | Danvers. | 6 | 30 " | 120 " | 720 " |
| 3 | ELIJAH POPE, | " | 4 | 28 " | 111 " | 444 " |
| 4 | CHARLES P. PRESTON, | " | 7 | 30 " | 112 " | 781 " |
| 5 | GEORGE PEARSON, | Saugus. | 6 | 30 " | 109 " | 654 " |
| 6 | NATHANIEL FELTON, | Danvers. | 8 | 32 " | 110,5 lbs. | 884 " |
| 7 | JONATHAN BERRY, | Middleton. | 8 | 30 " | 97,8 " | 790 " |
| 8 | DUNCAN McNAUGHTON, | Byfield. | 5 | 25 " | 91,5 " | 490 " |
| 9 | JOHN PRESTON, | Danvers | 4 | 26 " | 91,5 " | 366 " |
| 10 | NATHAN D. HAWKS, | Lynnfield. | 4 | 25 " | 85 " | 340 " |

This shows an average product of *one pound* to a cow *daily*, through the month of June, and *seven eighths of a pound daily* to a cow, for the four months from May 24th to September 24th.

When the extraordinary drought of the months of August and September are taken into view, as also the family consumption of milk before adverted to, it is but fair to say, that the statements presented the present season, give evidence of a production of *one pound of butter daily* for each cow, for the four best months of the season.

How this will compare with former years is not distinctly in mind. We remember when the Society first commenced their offer of premiums, Col. Jesse Putnam was successful in obtaining the first premium, and that his cows averaged a produce of two hundred

pounds each in a period of six months. This was thought a large product, and was accounted for by the extraordinary feed of the cows; the Col. being a man not accustomed to leave anything he undertook half finished. We have known some of the present claimants, with whom we have been acquainted *as such* for nearly *thirty years*, to present statements of a produce of eight pounds of butter a week to each cow for a number of successive weeks. These were among the best products, in the *natural way*, that we have known. We have often heard of cows that yielded two pounds of butter a day, and more, but we have never known a herd of such cows, or any considerable number together, that would do it, without using a feed for them that would "cost more than it came to." If such can be found, we should consider attention to such a stock one of the best modes of using a farm.*

There is so much time misspent and labor lost in the making of poor butter, that we feel it to be an imperative duty to endeavor to impress the minds of farmers and of their wives and daughters, with the importance of giving heed to this subject. There are some things in relation to it so well settled as to be universally known by all those who have any knowledge in the matter. There are others on which there remain great differences of opinion and variance of practice. As for instance, in the statements before us, we find some of the makers of butter apply *cold water* freely to the butter, both before it is taken from the churn and afterwards: "to aid in extracting the butter milk and to harden the butter," as they say. Others bring it into form without the use of water, and say that its use impairs the flavor, and essentially injures the quality of the butter. How shall it be determined which of these is right? This is a prac-

* In the Society's Transactions for 1834, pages 75 to 78, will be found an enumeration of cows most remarkable for their produce of butter. We refer to this with more satisfaction at the present time, because, it was compiled by that eminent friend of the farmer, and especially the Essex farmer, the late HENRY COLMAN, whose indefatigable exertions for their instruction, too soon extinguished his light in a foreign land.

Whoever shall undertake to note the progress of American Agriculture, will find much reliable and truly practical intelligence to have proceeded from his pen. Next to Col. PICKERING is this Society indebted to Mr. Colman, for most valuable instruction. We know not how a better service could be rendered the Massachusetts farmer, than by a compilation of the Agricultural papers that have proceeded from the pens of PICKERING, LOWELL, COLMAN, and PHINNEY, (who have now ceased from their labors,) with appropriate annotations. May we not hope in this age of Agricultural enterprise, when the ALLENS, the LINCOLNS, the WILDERS, and the BUCKINGHAMS, are nobly aiming to be foremost in doing good, that this medium of doing it, will not be entirely overlooked. "Blessed are they who have labored to do good; their works shall follow them." If this be not Scripture, it might well be.

tical question, applicable to every churning; quite too important therefore to be left in doubt. Probably most persons do as their mothers used to do, without inquiry whether there is any better mode of proceeding. In an intelligent article upon this subject, from one of the most successful makers of butter in this county, (see Transactions for 1840, p. 72,) we find this sentence:—"More depends on this than any part of the process in making good butter. If our dairy women would apply double the labor to half the quantity of butter, and thereby thoroughly remove all particles of buttermilk, this one half would be worth more than the whole in the condition it is usually sent to the market."*

The churning process is an essential part of the making of butter. At our request, Mr. Felton, who has for several years obtained the first premium on butter, has annexed to his statement an account of his mode of churning. We looked in vain through the several statements for information on this point. If it be true as it is said to be, that some kinds of churns will bring the butter in one half the time, with less than half the labor that others require, this is a fact of great importance in determining the best mode of making butter.

We have heard of many improved churns, but have seen none, the structure and principles of which better correspond with our ideas of utility, than Crowell's Patent Thermometer Churn. We cannot so well express the idea we wish to convey, as in the letter annexed, from a gentleman, himself expert in all the arts of butter-making.†

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* I am informed by a lady, who was instructed by her mother, who for a period the memory of man runneth not to the contrary, had the reputation of making the very best of butter, that she never applied cold water or any other water to the butter after it was churned. She considered such application injurious;—especially if the butter was intended to be put down as she said,—that is, to be preserved for future use. That it would not keep so well when soaked in water; was not so fine flavored; and was more likely to become rancid. Perhaps my respect for this lady, (who is my mother) influences my opinions, nevertheless there are hundreds, in Salem and vicinity who for years used their butter, when they had vigor to work it, who will bear testimony that no more reliable authority could be cited. In a matter of this kind I should place more confidence in the practical experience of a sensible woman, than in all the chemical analyses of all the Davys, and Leibig's combined.

†Dear Sir,—I have used the "Thermometer Churn" this season, and have been much pleased with it. It possesses a decided advantage in the spring and autumn, when the cream is generally so cold as to be a long time in forming butter in other churns, as by filling the space between the zinc and the outer side of the churn with hot water, the cream may be easily brought to the proper temperature for churning. In warm weather, however, I do not think much is to be gained by filling this space with cold water, as the cream should be sufficiently cooled before it is put into the churn; and if it is not, it could hardly be done by cold water in the short time generally occupied in churning. Still, in warm weather, I have found that the Thermometer Churn will bring the

Mr. Howard, of the Albany Cultivator, authority second to none other in the country, says, "according to our experience the best butter is not produced by a very *short* nor a very *long* period in churning. If it is churned too quick, the separation is not complete, and the butter besides being less rich, is deficient in quantity; if the process is continued too long, the butter is likely to be *oily*. We think our best butter-makers would decide that churning for ordinary quantities, say from ten to twenty pounds, should occupy from *thirty* to *fifty* minutes." This corresponds entirely with the opinion expressed by Mrs. Nathaniel Felton, who said "she did not want the butter to come in less than thirty minutes; it is not so good when it comes in a shorter time."

We are informed by some of those who have been most successful in the management of their dairies, that they look more to the *quality* of the milk given by the cow, than the *quantity*; and in selecting their cows to be kept for this purpose, they choose only those which give milk adapted to the purpose. It is unquestionably true that one quart of milk from some cows, will yield as much or more butter than two quarts from others. In selecting cows therefore, the quality of their milk should be tested, either by making butter from it, or by the use of a *lactometer*, which shows the comparative thickness of cream that will rise on similar quantities of milk. Mr. Holbert, an experienced farmer of N. Y. state, says: "I find by churning the milk separate, that *one of my best cows* will make as much butter as *three* of my poorest cows, giving the same quantity of milk."

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butter in much less time than any other I have ever used; and this, I think, may be owing to the form of the slats of the dasher. These have a wide and flat surface, obviously producing more agitation of the cream than the round slats of Galt's churn and of Kendall's churn. On one occasion, I have churned thirty quarts of cream into butter in eleven minutes in the Thermometer Churn, though it ordinarily takes a longer time, an average at least of half an hour; and a shorter time than this I do not think desirable.

It is claimed for some of the lately invented churns, the Atmospheric Churn, for example, that they will produce butter in four or five minutes; but I think it is very questionable whether in so short a time all the butter can be extracted from a given quantity of cream, or the butter can be of the best quality. What to me seems the greatest desideratum in churns is, some improvement in the application of the moving power, by which the amount, or rather the severity of labor may be lessened in churning. As it is now, it is work, and often hard work too, for an able bodied man. But if a Churn could be made to work so easily that a boy could operate it without fatigue for three or four successive churnings, it is evident that a great gain would be made in the expenditure of labor. "Blessings on the man who invented sleep!" exclaimed the renowned Sancho Panza—and equal blessings have I often been inclined to invoke for the individual who would make churning easy.

Very respectfully, yours,

HAMILTON, Oct. 23, 1849. ALLEN W. DODGE.

We have heard the same thing substantially from dairy women themselves. Let those cows which abound in *quantity only*, be turned over to those who care only for filling their measures; and let those that afford *substance* as well as *show* be kept to supply the churn.

But one parcel of cheese was presented to the Committee. This was such as to leave no hesitation as to the propriety of awarding the premium offered. If our recollection is right, a similar state of facts occurred the last year. Why it is that the farmers of Essex are so indifferent as to be unwilling to present their claims, for this branch of the products of the dairy, we are unable to imagine. It cannot be that they have discontinued the making of cheese, for this will never happen while people have an inclination to use it. That it is still used, every well furnished table bears testimony. That those farmers who live in the immediate vicinity of a ready market for milk or butter can turn it to better account than to make it into cheese, we have no doubt; but when two pounds of good cheese will readily command as much money as one pound of well-preserved butter, we think there are many farms on the sea shore and on the banks of the Merrimack, where their milk will be most advantageously used for the making of cheese. We remember to have seen splendid collections of cheese made in West Newbury and Andover; and if such are now there, we can only regret that they are not brought forward. Farmers should remember that they owe something to the public as well as to themselves; and that they have not done their whole duty when they have simply pocketed the money offered as premiums. The design of these Exhibitions is to present a fair specimen of the products of the County; and every one who has a spark of patriotism in his breast, should be willing to lend a helping hand. I wish those *good women* who labor and tug day after day in turning and rubbing their cheeses, would occasionally jog the elbows of their husbands, and urge them to go ahead in the way of their duty. Every man who loves his wife as he ought to do, will be proud to exhibit the products of her industry. If they will not, let the women themselves, do as others we could name have creditably done, exhibit their own cheeses with their own hands. What more interesting part of the exhibition could there be, than to have the products of a dozen dairies, under the superintendence of the ladies themselves, ready to explain how they were made?

On looking over the statements we were struck with the fact, that but *two* of the cows were of foreign breeds, (so called) viz:—Mr. M'cnaughton's of Byfield, whose produce was the seventh in quantity. These two were Durhams; there were no Ayrshires, no Devons—unless our natives may claim affinity thereto. Why it is that the farmers of Essex are so slow in introducing these classes of animals, we are unable to determine. Specimens of them have been among us on the farms of Parsons, Derby, Poore and others for years, and many efforts have been made to make known their superiority; but still the real *hard hands* do not take hold of them. On whose judgment, then, shall we rely, the *gentlemen farmers*, or the *operative farmers?* The *theory* of one recommends the Durhams and the Ayrshires for the dairy, as being the greatest producers; the *practice* of the other, adopts the natives. We leave this to be decided by those of more experience than ourselves. We are willing to prove all, and hold on upon the best.

One general remark must close what we have to offer on this subject; and our commentaries upon the statements particularly, must be appended to each.

The premiums are offered, not so much for the *superior quality* of the *article presented*, as for the *superior process* by which it is made so, that others may go and do likewise.

We recommend the premiums to be awarded as follows:—

FOR JUNE BUTTER.

| | |
|---|---|
| To Nathaniel Felton, of Danvers, first premium, - - | $10 |
| John Preston, of Danvers, second premium, - - - | 8 |
| Elijah Pope, of Danvers, third premium, - - - | 6 |

FOR SEPTEMBER BUTTER.

| | |
|---|---|
| To Charles P. Preston, of Danvers, first premium, - - | $10 |
| Jonathan Berry, of Middleton, second premium, - - | 8 |
| Nathaniel Felton, of Danvers, third premium, - - | 6 |

FOR CHEESE.

| | |
|---|---|
| To David Choate, of Essex, first premium, - - - | $8 |

In behalf of the Committee,

J. W. PROCTOR, Chairman.

DANVERS, October 25, 1849.

NOTE.—Here, we cannot forbear a brief narrative of facts that came within our own observation. About ten years since, a gentleman possessed of means abundant for the making of experiments, but who then had no practical knowledge of farming whatever, came into possession of a fine farm

in a region famous for its dairy products. He started off to make butter, with an assurance that he would astonish the natives. He was fully versed in all the learning of the "Herd Book"—could give a minute detail of the genealogy of the most celebrated cows for many generations. The Oakes Cow, the Nourse Cow, that yielded near twenty pounds of butter per week, were but pigmies in his estimation—pretty good of the kind, to be sure—but then they were nothing but NATIVES. He was going to gather a herd that would show what could be done. He would not accept as a gift a cow that would yield less than TWO POUNDS of butter per day. Accordingly, he purchased his cows according to their parentage, paying from $100 to $200 for each animal, and began his operations. He employed expert foreigners to superintend his concern. At first he did not succeed, because his place for setting the milk was not constructed according to rule exactly. A change was made in this. Then things did not go quite right, and he thought it might be, because his dairy woman was not acquainted with the usages of the neighborhood; and so he struggled on for several months, changing this and altering that, scarcely making butter enough for the consumption of his own family; and what he did make, of the most ordinary quality. And to complete the farce of visionary farming by a GENTLEMAN, he called upon one of his better experienced neighbors "to bring him some butter fit to be eat," for, said he, "some how or other, our folks can't get the knack of making it."

Butter made in Orange County, New York, has the highest reputation in the market—so much so, that most New York butter passes under that name. Here the MILK is churned, and not the cream. It is said "to give a peculiar firmness and fineness of texture, and wax-like appearance when it is fractured, which butter made by churning the cream seldom or never has." The art of making ORANGE COUNTY BUTTER is said to be in the WOMEN, and not in the cows or PASTURES—you take a good DAIRYMAID from there, and she will make equally good butter, hundreds of miles distant. In churning the MILK, it takes about ONE QUARTER PART more to produce a pound of butter, than it does when the cream is severed from the milk.

On examining the products of Mr. Hall's Dairy, of Chemung Co., who took the first premium in the N. Y. State Society, 1846, we find 19 cows yielded 3189 lbs. of butter, in one hundred eighty days, or about 168 lbs. to a cow. In the same time, our fifty-six cows yielded 9174 pounds of butter, or 164 lbs. to a cow. This comes so nearly up to the products of N. Y. State, that we are satisfied our farmers, by proper attention to selecting their cows for the dairy, can, if they will, do as well as the best. Let them apply their true Yankee tact in this matter, and they may challenge the world.

NOTE. As a matter of curious information, we have collected in a condensed form, the products of several of the most extraordinary cows in Massachusetts, that have come to our knowledge.

| Date. | Name. | Place. | Weekly produce. | Length of time. |
|---|---|---|---|---|
| 1826. | OAKES COW, | Danvers. | 16 lbs. | 16 weeks. |
| 1824. | NOURSE COW, | " | 14 " | 16 " |
| 1828. | SANDERSON COW, | Waltham. | 14 " | 16 " |
| 1830. | HOMER'S COW, | Bedford. | 14 " | 12 " |
| 1830. | HAZELTINE COW, | Haverhill. | 14 " | 12 " |
| 1830. | BARRETT COW, | Northampton. | 15 " | 12 " |
| 1845. | BUXTON COW, | Danvers. | 16 " | 12 " |

These cows show a product of more than two pounds per day, each, for a period of three months. We think it would be difficult to collect together such a herd.

# STATEMENTS.

JOHN STONE, JR'S STATEMENT.

*To the Committee on Dairy:*

GENTLEMEN,—I present for your examination 26 pounds of butter, being a sample of 220 pounds, made from the milk of four cows, in thirty-nine days, from the 1st of June to the 9th of July. During this time, we sold eight quarts of cream, and used one quart of milk a day in the family. We have ascertained that nine quarts of our milk yields one pound of butter, and that one quart of cream will make a pound of butter; consequently the produce of the four cows, in thirty-nine days, was equal to 232 lbs., or one and a half pounds a day to each cow. Finding that our milk could be used to better advantage, than in the making of butter, after the 20th of July we discontinued making; and therefore I cannot give an account of butter made in September. From the quantity of milk given by the cows in September, I am of the opinion that eight pounds of butter a week to each cow, could then have been made. Our cows had pasture feed only. Our pasture contains between four and five acres, gravelly bottom, has been ploughed and well cultivated. I have taken pains to select cows of good quality for butter-making. Three of my cows I obtained from Mr. Daniel Buxton, Jr. of Danvers, a man who has and does every thing in the best manner. The mother of this stock was remarkable for her milking properties. They are of the breed called Buffalo, without horns, and above the middling size. Two of them have not done so well this season as formerly; and I attribute it to their having been confined too closely during the winter. The old cow became farrow, and was killed at the age of thirteen years, weighing dressed 600 lbs. I have several young animals of this stock. I am thus particular in stating these facts, because I consider them of the first importance in an attempt to establish a good dairy—a point at which I have been aiming for years.

*Process of Making*,—The milk is strained into tin pans and set in a cool cellar, when the cream is sufficiently risen it is taken off

and placed in stone pots. We churned twice a week this season. The butter milk is worked out by hand, without the application of any water, and salted with an ounce of ground rock salt to a pound.

JOHN STONE, JR.

Marblehead, Sept. 26, 1849.

REMARKS.—Knowing, as we do, the attention given by Stone to his dairy, we were quite surprised when we learned his butter had not FOUND FAVOR with those who TASTED. But on further inquiry, it appeared to them to be RANCID, and of course not worthy of premium. Subsequent examination has satisfied us, that this character was confined to the UPPER LAYER ONLY, and that the butter was of prime quality when first made. We hope Mr. Stone, or HIS LADY, will look well to this department another season; and if he continues to make twenty per cent more than any other, as he has done this season, we can assure him that his efforts will be rewarded. We have ventured to estimate the whole amount that could have been made during the four months at 820 pounds. We find that the same quantity of his milk yields ten per cent more butter than is yielded on Mr. Putnam's farm—which stands in the first class for dairy products.

Our curiosity being awakened by the account given by Mr. Stone, of his cows, we have learned on inquiry that the mother of this stock was purchased by Mr. James Wilson, from a drove about twenty years since. Proving to be an excellent cow, her calves were raised and distributed in the neighborhood; and have uniformly been of superior qua Many of them, by reason of associating with strangers, have lost their peculiarity of wanting horns, but still have good bags, well filled. Eight quarts of milk from these cows have produced a pound of butter; and when well fed, they have yielded sixteen quarts of milk per day. How important is it, when a person wants to have a good dairy, and can find a cow of this description, that her offspring should be reared. It is equally important, also, to take care with what animals she comes in contact; because the character of her offspring will depend very much on the company she keeps. We are fully persuaded that the milking properties depend quite as much upon the MALE PARENT, as the FEMALE.

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DANIEL PUTNAM'S STATEMENT.

*To the Committee on Dairy:*

GENTLEMEN:—A firkin containing 27 pounds of June butter, a specimen of 94 pounds, made from the milk of six cows, in two weeks, averaging 7 5-6 pounds per week for each cow, is forwarded for your taste and judgment.

For some days the milk was carefully measured at the time of straining, and it was found to require ten quarts of milk to make one pound of butter.

The process of making you have known in previous years, and I will merely say, that tin pans are used—cream is kept in large tin pails; churned twice a week; the butter is much rinsed in cold water, and one ounce of salt is allowed to each pound of butter; the cellar is airy and cool.

The chief requisitions in butter-making are known to be, the free and faithful use of soap and hot water in the cleansing of the vessels used, and the separation of the butter-milk from the butter after churning, with the hands; how far we may have been successful in the sample before you, remains, (in part at least) for your decision.

The feed of the cows at the time the butter was made, was nothing more than a common pasture.

Very respectfully yours,

DANIEL PUTNAM.

Danvers, Sept. 26, 1849.

REMARKS.—On looking over this statement, we are pleased with the particularity and distinctness with which facts are presented;—although the time of FOURTEEN DAYS is not the TRUE TIME to have been taken—and the quantity made during the four months not specified, as we should liked to have had it. We were quite surprised when we found that, by the TASTING PROCESS, Mr Putnam's butter had not secured favor; and can only explain it upon the maxim "that the best may miss it sometimes." We certainly know that Mrs. Putnam and her daughters have often been successful in presenting the very best of butter. Our respect for their management of the dairy is equal to that of any other. We perceive that they apply water in getting out the buttermilk—possibly this may explain why their butter fell behind the butter of those,to which no water was applied; and possibly the fault may have been in the imperfect taste of the judges, of which their statement has a slight indication of fearful apprehension.

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ELIJAH POPE'S STATEMENT.

*To the Committee on Dairy:*

GENTLEMEN,—I offer for your inspection, a jar of June butter, containing 25 pounds, being a specimen of 127 pounds, made from the milk of four cows, from the 1tt of June to the 5th of July.

Also, three boxes of September butter, containing 22 pounds, being a sample of 445 pounds, made between the 24th of May, and 24th of September, from the same cows, with the addition of the milk of a two year old heifer, since the 23d of June.

Their feed has been common pasture, until the 20th of August, since that time, green corn fodder once a day.

*Process of making.*—The milk is strained into tin pans, it stands in a cool cellar, from 36 to 48 hours, when the cream is taken off, put into tin pails, and stirred every day.

We churn once a week. During the warmest weather the cream is placed in the well, from twelve to twenty-four hours before churn-

ing. After it is churned the buttermilk is thoroughly worked out, and the butter is salted with 3-4 of an ounce of ground rock salt to the pound. After standing six hours, it is again worked and weighed, each pound separately.

ELIJAH POPE.

Danvers, Sept 26th, 1849.

REMARKS. We notice that Mr. Pope presented twenty-two pounds only of September butter, when there should have been twenty-five; but as the fact would never have been known, if it had not been so written in the statement,—it is not considered a material variation. Some of the committee thought the taste of this butter indicated that it must have been made since June; but the Committee did not feel at liberty to assume any fact to be different from the statement without some evidence to sustain the assumption.

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CHARLES P. PRESTON'S STATEMENT.

*To the Committee on Dairy:*

GENTLEMEN:—I offer for your examination one pot of June butter containing 27 pounds—being a specimen of 288 pounds made between the first of June and the 9th of July, from the milk of five cows, and four heifers three years old—all of native breed.

Also, two boxes of September butter, containing 28 pounds—a sample of 786 pounds made between the 20th of May and 24th of September, from the milk of the same cows.

The cows have had common pasture feed until the 1st of August, when we commenced feeding with corn fodder, once a day.

*Process of making.*—The milk is strained into tin pans, and placed in the cellar, where it stands from twenty-four to thirty-six hours; it is then skimmed and the cream put in stone jars, and set in a vault made for the purpose. Churn twice a week. We are very particular to work every particle of the butter-milk out, and salt with one ounce of rock salt to the pound.

CHAS. P. PRESTON.

North Danvers, Sept. 25, 1849.

REMARKS. Mr. Preston's statement shows an intelligent apprehension of the principles upon which the premiums were offered, and successful management of his dairy. He again finds himself among the fortunate claimants.

GEORGE PEARSON'S STATEMENT.

*To the Committee on Dairy:*

GENTLEMEN:—I present for your inspection, one pot of June butter, containing 29 pounds, being a specimen of 260 pounds, made between the first of June and the 9th of July, from the milk of four cows, and three three years old heifers, with the addition of one cow after the first of July.

Also, one pot of September butter, containing thirty pounds, being a specimen of 652 pounds, made between May 20th and Sept. 20th, from the same cows. Their feed has been common pasture, till the middle of August. They have been fed with green corn once a day, till September, then fall feed to the present time.

*Process of making.*—The milk is strained into tin pans, and placed in a milk room, where it stands from twenty-four to forty-eight hours, according to the weather, and then it is skimmed and the cream is put in tin pails and placed in a well, and there remains till churned. Churn twice a week. The butter-milk is worked out thoroughly, and the butter is salted by one ounce of ground rock salt to the pound.

GEORGE PEARSON.

Saugus, Sept. 25th, 1849.

REMARKS. In Mr. Pearson, the Committee were pleased to find a new claimant, from a new town. The products show a dairy well managed. In quantity he has done almost as well as the best. He must be aware that he has to contend with those who have had much experience, and to ensure success, the utmost vigilance and care is necessary.

We observe that Mr. Pearson as well as several of the other claimants, when the drought came on supplied their cows with green corn fodder, planted for this purpose. A practice so common must have some meaning in it. We notice it particularly, because a question has been made by some, whether this kind of feed is favorable to the production of milk. It could be demonstrated, by chemical analysis, that there are no butter making qualities in green corn: still so long as most of our good farmers continue to cultivate and use it for this purpose, we shall be inclined to respect their use, more than our own arguments. In matters agricultural, practical experience is the "one thing needful."

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NATHANIEL FELTON'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN:—I present for your examination 26 pounds of butter, made in June, and 27 pounds of butter made in September, as samples of 884 pounds, made from the milk of eight cows and a

heifer, in four months, from the 24th of May to the 24th of September. One of the cows has been in milk thirteen months. We have used milk in the family for ten persons, and regularly sold two gallons on each Saturday. Annexed is a statement of the quantity made each week. The cows had common pasture feed until the middle of August, then for a fortnight I gave them shorts, and continued to feed them with corn fodder while their feed was short in the pasture. I consider good pasture feed, with good spring water, the very best supply for the making of good butter. When this fails I supply the vacancy with other things, that can be obtained with least inconvenience.

*Process of making.*—The milk is strained into tin pans, and placed in a cool cellar, where it stands from thirty-six to forty-eight hours, when the cream is taken off, put into pails, and stirred daily. We churn once a week. During the warmest weather the cream is hung in the well, about twelve hours before churning. After the butter comes, the first thing to be done is to work out the buttermilk. This is done by hand, without the application of any water—believing such application to be no benefit, and in some respects injurious. About one ounce of best salt is usually applied to a pound, varying in some measure according to the condition of the butter, to be determined by the taste of the person working it. After standing about one hour, it is worked over a second time, and then weighed each pound separately. The June butter was preserved by the application of a strong brine, made of common fine salt. I consider that I have used about the milk of eight cows through the season, for the making of butter, and that their average yield has been about *one pound of butter a day to each cow.** I find a great difference in the milk of different cows, in the making of butter; and in selecting cows for this purpose, make a point of ascertaining their butter-making qualities, by actual experiment with their milk.

Danvers, Sept. 26th, 1849. NATHANIEL FELTON.

*WEEKLY ACCOUNT OF BUTTER MADE.

| | | | |
|---|---|---|---|
| May | 24th, | 40 pounds. | |
| " | 31st, | 50 | " |
| June | 7th, | 50 | " |
| " | 14th, | 67 | " |
| " | 21st, | 55 | " |
| " | 28th. | 56 | " |
| July | 5th, | 58 | " |
| " | 12th, | 52 | " |
| " | 19th, | 45 | " |
| " | 26th. | 45 | |
| August | 2d, | 40 pounds. | |
| " | 9th, | 40 | " |
| " | 16th | 42 | " |
| " | 25th | 41 | " |
| " | 30th | 43 | " |
| Sept, | 6th, | 42 | " |
| " | 18th, | 41 | " |
| " | 20th, | 42 | " |
| " | 21th, | 35 | " |

Amounting to 884 pounds.

KIND OF CHURN USED.—I use the same churn I have used for twenty-five years or more. It

JONATHAN BERRY'S STATEMENT.

*To the Committee on the Dairy:*

GENTLEMEN:—I present for your examination 26 pounds of butter, made in June, and 28 pounds of butter made in September, as samples of 790 pounds, made from the milk of six cows and three heifers, in four months next following the 20th of May.

My cows averaged one pound a day each, through the month of June, and about seven-eighths of a pound each through the season. Previous to the middle of August, they had common pasture feed only. After that they were supplied with green corn, and permitted to go on our mowing ground.

Our milk is strained into tin pans, and permitted to stand from forty-eight to seventy-two hours, until the cream is fully risen; then it is put into pails, covered, and set in a cool vault prepared for the purpose. We usually churn once a week. The butter-milk is worked out by hand; and about one ounce of salt is applied to a pound. Our cows are of native breed, and gathered without particular care in their selection.

JONATHAN BERRY.

Middleton, Sept. 26, 1849.

REMARKS.—The committee were gratified again to meet Mr. Berry among the competitors. Our friends of Danvers have so long been accustomed to go ahead with their claims for butter that we are pleased to find there are those in other towns who can begin to compete with the best of them. We shall be pleased to have specimens exhibited from every town in the county.

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is made in the form of a barrel, holding about 24 gallons, has a crank at the end, attached to a frame-work within, that revolves and agitates the cream. In this, there may be made 40 pounds of butter at a churning. It usually takes from 30 minutes to an hour to bring the butter. I have tried several of the new patterns of churns. Have found none that works so well as our old one. It has no PATENT NAME, but it has so long been accustomed to make good butter, that it has never yet failed to do so. There may be better forms of churns, but I am content to let well enough alone,—having long since ascertained, that every alteration proposed, by interested speculators, is not an improvement.

DUNCAN McNAUGHTON'S STATEMENT.

*To the Committee on Dairy:*

The sample presented is one wood box, of 25 pounds, made in June, 1849. Milked five cows; made 121 lbs. in all. The cows were three natives and two Durhams, kept in a very ordinary pasture.

*Method of making.*—The milk was strained into tin pails, and kept in a dairy cellar made for the purpose. The milk stands three days before it is skimmed, and the cream stands three days, (stirring it every day,) in a stone jar, before it is churned. Churn every third day. The butter is taken from the butter-milk, and worked through three waters, taken cool from the spring, until the butter-milk is entirely removed, then it is well salted and remains one day, when it is worked over again, working out all the extra salt, and made into pound lumps. The churn is soaked and cooled with cold water from the spring before the cream is put into it.

Lot No. 2.—The sample is twenty-five pounds made this present month. Milked six cows and made 79 pounds from the 1st to the 22d of this month. The cows were three native and three Durham, kept principally in the same ordinary pasture, with a feed of corn fodder every evening. The care of the milk, the method of making the butter is the same as No. 1, except that now the milk stands four days before it is skimmed, and the cream stands four days in the jar before it is churned. Churn every fourth day.

DUNCAN McNAUGHTON.

Byfield, Sept. 26th, 1849.

Remarks.—This statement is not in exact conformity with the conditions on which the premiums are offered. One remark we would make is, inasmuch as Mr. M. appears to have been free in the application of cold water to his butter—its quality was not improved thereby. From all we can learn, our impression is very strong that such application is not beneficial. If any one entertains a different opinion, we hope next year they will exhibit a parcel of June butter, purified with water, that shall be worthy of the first premium. Until this is done, we think the chances will be in favor of the butter, to which no water is applied.

JOHN PRESTON'S STATEMENT.

*To the Committee on Dairy:*

GENTLEMEN,—I offer for your inspection, one jar of June butter, containing 26 1-2 pounds, it being a sample of 171 pounds, made between the 20th day of May and the 9th day of July, and of 365 3-4 lbs. made between the 20th day of May and the 24th day of September.

I have milked four cows, all of native breed. One nine years old, two four years old, and one three years old. I have used in the family about four quarts of milk per day.

Their keeping has been common pasture, with corn fodder once a day since the middle of August.

*Process of Making.*—The milk is strained into tin pans, and set on the bottom of a cool cellar, where it remains from twenty-four to thirty-six hours. The cream is put in stone pots. We churn once a week. The buttermilk is thoroughly worked out, and the butter is salted with one ounce of rock salt to the pound.

JOHN PRESTON.

North Danvers, Sept. 27, 1849.

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NATHAN D. HAWKES'S STATEMENT.

*To the Committee on Dairy:*

GENTLEMEN,—I offer for your inspection a box of September butter, containing 9 pounds, being a sample of 340 pounds, made between the 25th of May and the 25th of September. I milked four cows. Their feed was common pasture until the middle of August. After that, they had corn fodder once a day.

*Process of Making*,—The milk is strained into tin pans. It stands from thirty-six to forty-eight hours, according to the weather. The cream is then taken off and put in earthen jars, and kept until ready for churning, which is once a week. After the butter has come, it is salted with an ounce of salt to a pound, and worked over twice, when it is ready for use. The milk is kept in an airy room above ground.

NATHAN D. HAWKES.

Lynnfield, Sept. 27, 1349.

REMARKS.—We are happy to recognize in Mr. Hawkes a claimant from a town that has never before come forward. It will be seen that the quantity presented by him was not such as the rules

DAVID CHOATE'S STATEMENT.

*To the Committee on Dairy:*

GENTLEMEN:—I offer for your inspection, 66 1-2 pounds of new milk cheese, being a sample of 800 pounds made between the 1st day of June and the 1st of August last. We had seven cows in milk during that time. After the 10th of August we milked nine.

The whole produce of the dairy has been as follows, viz:—800 pounds new milk cheese, as above, and 44 pounds of four meal do., with a small quantity of an inferior kind. Also, 219 pounds of butter. The butter has been chiefly made since the 1st of August.

The farm is situated upon Hog Island, so called, in this town, and has suffered from drought and from grasshoppers beyond any former year. The cows had no feed besides what they found in the pasture, until about the 10th of September, after which time they were occasionally let into the mowing grounds a few hours in the day. All the cows are of native breed, except one of the two which we began to milk about the 10th of August. This cow has had a quart of meal a day for ten or twelve days past only.

The whole number of new milk cheeses made is fifty-five. In making the first twenty-three, the night's milk was made blood warm, after taking off the cream in the morning; after which, the milk of both night and morning, with the cream of the night milk, was put together, and the rennet put in as usual, at the rate of half a pint to eight pails of milk. The other thirty-two cheeses were managed somewhat differently. A curd was made of the night's milk immediately after drawing it. This was left to drain through the night, and was mixed with the curd of the next morning. The quantity of rennet was the same as before, and the salt in both cases was a teacup full of the ground rock salt to a cheese of about fifteen pounds weight. We press from twenty-four to thirty hours. Milk has been used freely in the family through the summer, say about five quarts a day.

DAVID CHOATE.

Essex, Sept. 26, 1849.

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of the Society required to entitle him to enter into the competition. We hope he will learn wisdom by practice, and persevere until he succeeds. We want our neighbors to share in the benefits of the Society, and to show that they are worthy of them.

### A NEIGHBOR'S STATEMENT.

The following letter, from a son of Essex, whose dairy products the present season, have commanded the first premium in a neighboring county, will commend itself to favor; although the diffidence of the author will not suffer his name to be used.

*My dear Sir*,—I have twelve cows, mostly of the common native stock. There are among them, however, *twins*, said by the late Elias Phinney, Esq., to be of the Swinley, Ayrshire breed, and one of the North Devon breed. Three are old cows, two are heifers, one of which is just three years old, and has raised one calf last year, and one this; the other is two years old, and made the second week in September, five and a half pounds of butter. These heifers were raised upon my own farm. The first was taken from the cow when five weeks old, and fed immediately upon hay and water, without ever being learned to drink milk, or in any way changing her food, except by the addition of roots occasionally, until the next Summer, when she was sent to pasture. Her first calf was dropped when she was twenty-two months old. The other heifer was taken from the cow when five weeks old, and sent immediately to pasture. The calves of both are now in pasture, and promise well under similar treatment.

From the 20th of May to the 10th of August, six cows were pastured at home and milked. One of these calved early in December, and one in January last. Since that time, three more have been added to the number kept at home, and three remain dry, at pasture, away from home. They all have good pasture and an ample supply of running water.

In June, from the milk of six cows, we made 198 pounds butter. In July the severe drought had nearly destroyed the feed, and the quantity of butter was diminished. During the Autumn, the feed has been very good, and we have had the milk of nine cows, and from the whole we have made since the 23d of May, 1019 lbs. butter. The number of persons in my family has never been less than 14, and for many weeks during the summer, it has been 18, and we have used milk and cream at all times freely.

Our milk is strained into tin pans, and allowed to stand from 36 to 48 hours, in a cool, darkened room on the first floor of the house; except in August, when it is kept in a cellar, under a wing of the

house. The cream is taken off into tin pails; is salted a little, and stirred every day.

We churn twice each week during the summer. Before churning, the cream stands upon ice for twelve hours or more. After churning, the butter-milk is thoroughly worked out by the hand, and the butter is salted to suit the taste. The day following, the butter is worked over again and prepared for the market.

In laying down butter for the winter, we use stone jars. After packing it down very closely, we sprinkle salt and loaf sugar, between each layer of butter. In this way our butter has kept perfectly sweet through the season.

It should be mentioned, that during parts of July and August, the cows that were milked, had in addition to the pasture, green corn fodder; or in the place of that, Indian meal and shorts, equally mixed, in proportion of two quarts to each cow daily. And the same quantity of the same grain has been given to them during the last half of September, and of October.

The management of the dairy has, in consequence of the sickness of my wife, been wholly confided to my daughter the present year. Previous, she had had no particular training for this branch of housewifery. She engaged in it with alacrity, and her own health has been benefitted by the occupation.

You will, I trust, pardon the suggestion to one holding your *official* position, that it should be made a special object of our agricultural societies, to interest and awaken the attention of the female part of the community—perhaps by associating ladies in the examination of such articles as they are best competent to judge of; and by making the exhibition of such articles a distinct department of the annual fair. Or perhaps, by offering a premium for the rearing of fowls,—the cultivation of flowers, vegetables, or fruit trees,—or the keeping of bees, and such like. The dairy, needlework, knitting, &c. belong of course to them. But I would bring them into more active employment, in the open air. One of the best conducted dairy establishments in this town, where five or six cows are kept, is *wholly* taken care of by two females, a widow and her daughter. Mothers have much to do with the training of their sons to a love of, and an intelligent preparation for, a farmer's life. It is from their interest in, and their skilful management of, the labors which belong

chiefly to them, upon a farm, that their sons learn to love, and to practice with success, the business of farming.

I have cheerfully complied with your request, in making these suggestions, and hope that you, by embracing the facts in some communication of your own, may lead others *to do better* than I have done.

October 30, 1849.

Remarks.—Having witnessed, in the month of June, the skilful management of the dairy, referred to in the foregoing letter, and being impressed with the importance of encouraging *young ladies* to do, what their mothers alone have been accustomed to do, that they themselves, when their turn comes, may be qualified to go ahead, I solicited this communication. It adds much to the facts before stated. Particularly it shows to some extent, at least, what may be expected of the *Ayrshires* and *Devons*. I saw the animals, and have no doubt of the correctness of Mr. Phinney's opinion. I wish he could have lived to have done them justice. I was struck with the appearance of the young stock, on this farm, and have no doubt that the good sense of my friend who manages it, although he came into the field at the *eleventh hour*, will demonstrate that he nobly earns his reward. His suggestions, as to the expediency of encouraging females to come forward and take parts in our exhibitions, are worthy of regard. Universally they are admitted to constitute the *better half* of society; why should they not then have an equal chance to show themselves, and the work of their hands? Is there any one whose delicacy would be offended by such a sight? Let such remain at home. It would be a pity to expose nerves so nicely tuned. Ten chances to one, that the *fastidiousness*, that would object to a female taking part in an Agricultural Exhibition, would often be found appurtenant to that class of *personages* who are said "to strain at a *gnat* and swallow a *camel*."

The *buffalo* or *hornless cows*, spoken of in Statement No. 1, by Mr. Stone, are there considered as *natives*. This is not strictly correct. I hope to be able to give a more distinct account of this class of animals on a subsequent page.

J. W. P.

## ON PLOUGHING WITH DOUBLE TEAMS.

The Committee* on Ploughing with Double Teams, having attended to that duty, REPORT:

That twelve teams were entered, only eight of which appeared on the ground and competed for the premiums. Four when called were wanting. The lots for lands were drawn as follows:

No 1, to John Washburn, of Lynn.

No. 2, to Richard S. Bray of Newbury.

No. 3, to Nathaniel Felton, and Nathan Tapley, of Danvers.

No. 4, to William Foster of Andover.

No. 5, to Franklin Alley, of Marblehead.

No. 6, to Moses Pettingill, of Topsfield.

No. 7, to Daniel Putnam, of Danvers.

No. 8, to Stephen C. Thurlow, of West Newbury.

The ground was plain grass sward—lots 300 feet by 30.

The work by all the teams was remarkably well done, and it was with much difficulty that the Committee were able to decide upon the comparative merits and skill with which it was performed. After careful examination and deliberation, they have decided to recommend the following awards:

First premium of eight dollars, to Daniel Putnam of Danvers. Work performed in 29 minutes, with 22 furrows. Plough, Ruggles, Nourse & Mason.

Second premium of eight dollars, to John Washburn, of Lynn. Work performed in 30 minutes, with 24 furrows. This lot was about three feet wider than the others. Plough R. N. and M.

Third premium of six dollars to Richard S. Bray, of Newbury. Work performed in 27 minutes with 20 furrows. Plough R. N. and M.

Fourth premium of four dollars to Franklin Alley, of Marblehead; work performed in thirty minutes with 23 furrows. Plough, R. N. and M.

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*James Stevens, of Andover; Moses H. Poor, of West Newbury; Moses Pettingill, of Topsfield; Richard T. Jacques, of Newbury; Elias Clough, of Lynn; Benjamin Scott, of Salem; William Marshall, Jr. of Essex.

The work was performed with less whipping and goading than is usual at our ploughing matches, much to the satisfaction of the Committee, and setting an example which they could wish might be followed in the ploughing fields generally, throughout the county.

The attention of the Committee was called to the operation of "*Bartlett's Patent Double Plough.*" The work was witnessed with much interest. As it was to the Committee an entire new thing, they wanted further opportunity to examine it. Accordingly, the Chairman, President, and some of the Trustees, with other gentlemen, spent several hours the next day, in witnessing the operation of these ploughs. The result of this trial as communicated by one of the gentlemen present, is adopted, as expressive of the opinion of the Committee, so far as the Chairman is permitted to speak, in their behalf. It is as follows:

For the Committee,

JAMES STEVENS, Chairman.

North Andover, Oct. 17, 1849.

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Dear Sir,—Cheerfully do I state my impressions on witnessing the operations of "Bartlett's double plough,"—premising, that I make no pretension to skill in the use of the plough, other than what I have learned by observation, and a deep interest in the subject.

There were three sizes of the plough presented; each of which was used for the purposes designed. The grass land was on the same field, where the other plowing was done—a deep rich soil, that had borne a large burden of grass, and was closely matted with the roots of the grass. The land was level and entirely free of stones—rather dry, except the moisture of the slight rain of the evening previous. The largest size were drawn by three yoke of cattle, and guaged to cut furrows, each, nine inches deep, and sixteen inches wide. This work was perfectly well done, and the furrow slice laid as accurately as with a single plough. The team had to labor in a manner that could not long be continued. It was an experiment in plowing not adapted to common use. There can be no objection to the furrow being cut of this depth—but two furrows nine or ten

inches wide, would be much better than one, fourteen or sixteen inches wide. I do not approve of the practice of cutting wide furrows, and laying them entirely flat. The English practice of cutting narrow furrows—just so wide as they can be fairly turned, has many reasons in its favor. *If the double plough can be used to turn the furrows in this way, and double the number of furrows can be made in the same ground in the same time, even though no more land will be broken, much will be gained by its use.*

The middle size ploughs were moved by two yoke of cattle. They were guaged to cut the furrows thirteen inches wide and seven inches deep. This work was done without any extra effort, in a manner that could be continued. I could not see that the work was not done equally well, as that by the team along side, attached to single ploughs. Without doubt, more power was required to do the work; but how much more, I had no means of determining. I feel confident, *not twice as much.* The labor of one man, at least, was saved in the operation. With this work we were entirely satisfied.

This and the size smaller were operated in old ground also, and the work was perfectly well done. In the ploughing of this kind of land, where the whole power of the team is not required, I know of no reason why nearly double the work cannot be done, in about the same time. The ploughing done by these ploughs surpassed our expectations. The furrows were cut with greater uniformity, one of them necessarily being true without deviation,—one plough in a measure guiding and controlling the movements of the other. They were guided as easily as a single plough;—in fact, they would move for rods together without any guidance. How these "Siamese ploughs" will operate in rough and stony land, I had no opportunity to witness, and therefore express no opinion. So far as I have seen their operation, I am pleased with it. The only difficulty noticed in the operation of these ploughs, was at the end of the furrows,—*the taking out and setting in again.* This appeared to require an extra effort on the part of the ploughman;—the skill of an efficient and experienced hand. It appeared to be something that *a boy*, or *a weak man*, could not readily do. If this be so, it must be obviated, or it will constitute a serious objection to their ordinary use. It is not enough that they can be advantageously exhibited at a "Cattle Show;" they should also operate freely when no one is looking on.

One gentleman remarked, "If these ploughs shall be found useful in practice here, they will probably be of much greater value in the extensive fields of the southern and western states; as any number of ploughs may be connected on the same principle. Perhaps the application of steam power to move them in large plain fields, may hereafter be found practicable and useful."

The invention is an ingenious one, and worthy of approbation. I have heard of double ploughs, but never before saw their movement. It is the best combination for the purpose I have known. I feel greatly obliged to the gentlemen for favoring our community with an opportunity to witness their operation, and think them worthy of thorough trial;—and hope some of our enterprising farmers will, before our next Exhibition, give them such a trial.

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## ON PLOUGHING WITH SINGLE TEAMS.

The Committee* on Ploughing with Single Teams Report:

That seven entries were made, as follows:—

Hobart Clark, of Andover,

Henry Poor, of Andover,

J. Osgood Loring, of Andover,

Seth Holden, of Danvers,

Elijah Pope, of Danvers,

Benjamin P. Ware, of Marblehead.

Only five of the teams appeared on the field. The land appropriated for the purpose was a tough grass sward, in a rich soil, free of stones or other obstructions. It was laid out in lots thirty feet wide and three hundred feet long, with side furrows cut. The ploughing was required to be done at least *six inches* deep, and without a driver. All the teams but one did their work as required. One team ploughed handsome, but not so deep as required. The committee did not feel at liberty to look at this work, as coming into the competition, as it was not done in conformity with the conditions on which the premiums were offered. Whatever may be the opinion of competitors of the propriety of these conditions, if they enter, understanding them, they are bound to regard them, for the time be-

* William Sutton of Salem—Farnum Spofford of Andover—Horace Ware Jr. of Marblehead—Kendall Osborn and James P. King of Danvers.

ing. The work was done by the several teams, in time varying from thirty-six to forty-one minutes; and with an average of twenty-two furrows, being a width of fourteen inches for the furrow slice.

As to the award of the first and fourth premiums, the committee had no question. As to the second and third, they were divided in opinion. Their final award was as follows, viz:

| | |
|---|---|
| To Hobart Clark, of Andover, first premium, - - | $8 |
| To Benj. P. Ware, of Marblehead, second premium, - | 6 |
| To Elijah Pope, of Danvers, third premium, - - | 4 |
| To Henry Poor, of Andover, fourth premium, - - | 2 |

The land was similar to that ploughed by the double teams; only the furrows were not cut so deep, by about *two inches*. The work of the double teams was completed in thirty minutes, being three-fourths of the time occupied by the single teams. A fair question arises, which of these kinds of ploughing is most worthy of being used on the farm? The fact that there has been, almost every year, *twice as many double* as *single teams* on the field, seems to indicate that the proprietors themselves have an inclination for the use of double teams. The committee are not unmindful, that it is contended by some, that one pair of cattle is sufficient to do ordinary ploughing; and that *six inches depth* is as good as more. They have heretofore been inclined to this opinion; and have attempted cultivation in this manner. But they are satisfied from their own observation, that it is best to employ at least two pair of cattle in turning grass land, and in the first ploughing of ground that has been cultivated; and that the furrows should be cut from *eight* to *twelve inches* deep, where the soil will admit of it.

The advantages accruing from deep ploughing will more than counterbalance the additional expense. One of these is, where the land is *sidling*, it will not wash near as much. The earth having been stirred deep, the rain will settle down, and not run off, as in shallow ploughing. Deep ploughing increases the quantity of soil to be used by the growing crop; especially if the land is properly manured—and there is no use in attempting cultivation without liberal manuring, The maxim, "Once well done, better than twice poorly"—applies with peculiar force to the cultivation of our fields.

The committee have ventured these suggestions, because they have witnessed a different opinion gaining ground, in some of our most intelligent agricultural districts; and because on their own

farms, they have found the practice of ploughing with single teams not worthy of being continued. They therefore hope the time will be far distant, when our Agricultural Societies shall discontinue the practice of offering premiums to encourage the use of double teams. Of *double teams* they approve ;—of *double ploughs** they will speak, when they have tried them.

For the Committee,

W. SUTTON, Chairman.

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## ON PLOUGHING WITH HORSE TEAMS.

The Committee† on ploughing with Horse Teams, REPORT :

Three were entered and upon the field. Lots of Land 300 feet by 30—similar to those assigned to the ox teams.

William G. Brown, of Ipswich, did his work by 22 furrows, in 32 minutes, awarded the first premium, $8 00

Joseph Whittredge of Hamilton, did his work by 22 furrows, in 38 minutes, awarded the second premium, $6 00

John Dorr, of Ipswich, did his work by 22 furrows, in 29 minutes. and awarded the third premium, $4 00

For the Committee,

SAM'L C. PITMAN, Chairman.

Salem, Sept. 27, 1849.

REMARKS. The offer of premiums for plowhing with HORSE TEAMS, has been continued for a number of years. Generally there have been claimants enough to take the premiums and no more. Committees have been content to state the awards made, and no more. In this we think they have failed to do their whole duty. We want to know ths comparative advantages or disadvantages of the use of different kind of teams. If horses are the best animals to be used for plow-

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* In this observation, we are confident no unkind reflection is intended upon double ploughs. All that is intended is, let there be a fair chance to show their utility :—let us see by their actual use, whether they will be preferred. Such is the tendency, of late, to cry up new things, that we hardly know even on what kind of SOIL we stand—much less what kind of ploughs are best to turn it. The man who makes two blades of grass to grow, where but one grew before, has long been hailed as a public benefactor. Much more then, should the man be greeted, who can contrive to turn two furrows, by the same power usually required for one.

†Samuel C. Pitman, of Lynn ; Andrew Mansfield, of Lynnfield ; Hazen Ayer, of Salem, Gideon R. Lucy, of Newbury ; William R. Foster, of Andover ; Seth Holden, of Danvers.

ing we want to know it. The usages of our farmers are very little in favor of the use of horse teams. But it may be, because they do not rightly understand their comparative value. As lots similar were assigned to all the teams on the field, on this occasion, it may be interesting to compare their work, viz:

Double teams in 30 minutes, 22 furrows, 8 inches deep,
Single teams, in 40 " 22 " 6 "
Horse teams, in 33 " 22 " 6 "

This is the average result of operations. Supposing the furrow slice of each to have been laid equally well, which work is to be preferred? This is an inquiry that we should like to have seen discussed by the Committee who were entrusted with the care of it. When half a dozen experts are called upon to spend their time in examining a particular kind of work, we want the benefit of their concentrated judgment. No fault is found with what they did, we only regret that a part of their duty was left undone. But we forbear to enlarge on a topic, on which we do not feel sufficiently informed to express an opinion. We hope thsoe suggestions will elicit the desired information. From each Committee a full Report is expected. Care should be taken that these able and willing to make such Reports, should be selected for the purpose.

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## ON DOMESTIC MANUFACTURES.

The Committee on Counterpanes, Carpets and Rugs, REPORT:

Among the many ways in which Genius manifests itself to the world, the converting of cheap materials, or such as would otherwise be thrown away as useless, into useful and ornamental articles, for household consumption, such as rugs, counterpanes and mats is, not the least praiseworthy. To fabricate a substantial and beautiful rug calls into exercise not only the hands, but some of the higher faculties of the mind also. On such we often see maped out some of the distinguished traits in the character of the fair manufacturer, disclosing her taste, her appreciation and love of the beautiful, order and color; her patience, perseverance and ideas of domestic economy.

A Hearth Rug should be in keeping with the quiet,—"the ineffable coziness of one's own fireside." Fighting dogs and cats, race horses at full speed, or other animals rampant, should never be seen pictured there. But the innocent lamb and other domestic animals, couched or in attitudes expressive of Peace, Harmony or Love. There also, may be represented flowers, buds and the foliage of plants. But a correct taste should here we think follow Nature, and never exhibit the magnificent pæony attached to a pumpkin-vine, or the peaceful dahlia, growing on a cabbage stump. As a general rule we should recommend the imitation of real flowers and leaves instead of inventing such as Nature never produced. Let those who think they can improve on her models try to change for

the better the shape of a leaf—a leaf of any plant or tree whatever, by clipping it with scissors. The next most important study for artists, (and successful manufacturers of rugs are worthy to be ranked as such,) is the choice of a color for the back-ground, and the management of light and shade. The color of the back ground should be such as will contrast well and give relief to all the colors in the figures. And it should ever be rememberd that the sun never shines on the opposite sides of a tree, plant or blossom at the same time, and no picture can possess much merit, in the shading of which this fact has been disregarded.

Governed in some measure by these views, your Committee Report that the show of rugs and braided mats was very superior.

So numerous were the articles presented, and so many of nearly equal beauty and other valuable qualities, that the Committee had much difficulty in deciding, their respective claims to notice, the premiums offered, and gratuities merited. The time allowed for examination was so short that it was impossible to compare each with all in a satisfactory manner. They cannot therefore suppose that they have done full justice to all the claimants. They were obliged to be satisfied with doing as well as they could, under existing circumstances. Reserving therefore some hints for the Trustees, sug gested by their experience on this occasion, in regard to the management of this part of the exhibition in future, your Committee recommend the following premiums and gratuities.

Per order of the Committee,

ANDREW NICHOLS, Chairman.

Danvers, September 27, 1849.

The Committee recommend the premiums and gratuities to be awarded as follows, viz:

COUNTERPANES.

| | |
|---|---|
| Helen M. Snell, Beverly, Knit Counterpane of 1,500,000 stitches, first premium, | $4 00 |
| Margaret Healey, Salem, Knit Counterpane of 1,500,000 stitches, second premium, | 2 00 |
| R. Coburn, of Ipswich, Knit Counterpane, gratuity, | 50 |
| Mrs. Horace Bickford, of Newburyport, Silk Counterpane, | 1 00 |
| Mary A. Buffum, of Salem, Counterpane, | 50 |
| Mrs. H. West, of Haverhill, " do., | 50 |

| | | |
|---|---|---|
| Elizabeth C. Green, Ipswich, | Counterpane, | 50 |
| Mary Pillsbury, West Newbury, | two do. | 50 |
| Augusta Lamson, Salem, | do. | 50 |
| Eliza A. Innis, do. | do. | 25 |
| Mrs. White, do. | do. | 25 |
| Mrs. Hannah Conner, Newburyport, | do. | 25 |
| Sarah E. Lakeman, Salem, | do. | 25 |
| Sarah H. B. Cogswell, Essex, | do. | 25 |
| Mrs. H. Gerrish, Newbury, | do. | 25 |
| Louisa Norwood, Beverly, | do. | 25 |
| Elizabeth T. Poor, West Newbury, | Quilt, | 25 |
| Caroline B. Safford, Salem, | Cradle Quilt, | 25 |

CARPETINGS.

There were no articles in this department which the Committee thought within the rules of the Society, which require twenty yards to be exhibited. They recommend the following gratuities:

| | | |
|---|---|---|
| Abigail Webb, Salisbury, | Carpet, | 50 |
| Mary Upton, Salem, | Stair Carpet, | 50 |

RUGS

| | | |
|---|---|---|
| Esther Woodbury, Hamilton, | 1st premium, | 3 00 |
| Elizabeth Knowlton, Beverly, | 2d do. | 2 00 |
| Mrs. Stephen Dodge, Wenham, | gratuity, | 1 00 |
| Lucy Nutter, Essex, | do | 75 |
| S. A. Carlton, Danvers, | do | 50 |
| A. Putnam, do | do | 50 |
| Abigail Webb, Salisbury, | do | 50 |
| Nancy Baily, Beverly, | do | 50 |
| Caroline Choate, Essex, | do | 50 |
| Elizabeth R. Merrill, Salem, | do | 25 |
| P. P. Wallis, Danvers, | do | 25 |
| Mrs. Sargent, Salem, | do | 25 |
| Harriet Smith, Beverly, | do | 50 |
| Mary Higbee, Salem, | do | 25 |
| A. S. Wyman, do. | do | 25 |
| Edith Burnham, Essex, | do | 25 |
| Hannah S. Colby, Salem, | do | 25 |
| M. O. Goldbury, Beverly, | do | 25 |
| Susanna Burnham, Essex, | do | 25 |

BRAIDED MATS.

| | | |
|---|---|---|
| S. Mills, Salem, | gratuity, | 50 |
| Sophia E. Forbes, Danvers, three mats, | gratuity, | 50 |
| Mary Hutchinson, Middleton, | do | 50 |
| Mehitable Trask, Danvers, two mats, | do | 50 |
| Harriet P. Kimball, do | do | 25 |
| Sarah Mann, Salem, | do | 25 |
| E. N. Mann, do | do | 25 |
| Abby C. Berry, do | do | 25 |

For the Committee,

ANDREW NICHOLS,

Salem, Sept. 27, 1849. Chairman.

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The Committee on the Manufacture of CLOTH and HOSIERY, submit the following awards, viz:

| | | |
|---|---|---|
| Mrs. Joshua Ballard, Andover, twenty yards Table Linen, 1st premium, | | 4 00 |
| Eusebia Armstrong, Lynn, Wrought Cradle Blanket, | gratuity, | 1 00 |
| Nancy Standley, Beverly, (blind) Woolen Hose, | do. | 1 00 |
| Mary P. Buxton, Danvers, 3 pairs ladies Hose, | do | 50 |
| Elizabeth P. Woodbury, Beverly, 4 pairs Hose, | do | 50 |
| J. A. Putnam, Danvers, 3 pairs Hose, wrought, | do | 25 |
| L. W. Goodrich, do. 1 pair Unbleached Wrought Cotton Hose, gratuity, | | 25 |
| E. A. Cleaveland, Byfield, 1 pair open-worked Cotton Hose, gratuity, | | 25 |
| Mary W. Batchelder, Lynn, six pair Hose, gratuity, | | 25 |
| Ruth Trask, Beverly, aged 89 years, 1 pair Hose, | | 25 |

For the Committee,

Salem, Sept 27, 1849. JOHN HOBBS.

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The Committee on LEATHER and ARTICLES MANUFACTURED THEREFROM, beg leave to REPORT:

That they regret to see such a limited number of articles present-

ed this year in a department which is so intimately connected with our *understanding*, it being the largest manufacturing business in the county, if not the state. Indeed it would appear as if the shoemaker, so far as relates to our Annual Exhibition, neither *bristled* nor *waxed* warm in this cause, but that he had come to his *end*, or at least lost his *awl*. But we hope in future years to see a larger display of the specimens of the Boot and Shoe manufactures of Old Essex—such as are worthy of the reputation of her shoemakers, and such as we know that if they attempt it, they can exhibit.

The following gratuities are recommended to be awarded :

| | |
|---|---|
| Sumner C. Spofford, Georgetown, 1 pair mining brogans, | $2 00 |
| J. W. Morrill, do., 1 pair copper nailed do. | 1 50 |
| Jacob Dickinson, do, 3 pairs Boots, | 6 00 |
| Eliza A Small, Danvers, 1 pair gaiter boot uppers, | 50 |
| Sarah B. Whipple, Hamilton, 6 pair kid uppers, | 25 |
| Sarah B. Kilham, Danvers, 5 pair brogan uppers, fitted, | 50 |
| Richard Tenney, Georgetown, leather shoe strings, | 1 00 |
| E. A. Whipple, Hamilton, 10 pair Brogans, fitted, | 25 |

One pair of brogans, presented by Samuel Putnam, of Danvers, were manufactured by a slave in the Penitentiary, in Virginia, thirty years since. By these, the contrast is most forcibly illustrated between slave labor and free labor ; and until the chains of the oppressor are broken, we must continue to be in advance in all our mechanical pursuits.

STEPHEN DRIVER, Chairman.

Salem, Sept. 27, 1849.

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## ON FANCY ARTICLES.

The Committee* on Articles, not included in the duties of other Committees, regret that they were deprived of the services of their Chairman, who was absent at the time in a neighboring State. They, however, attended to the duty assigned them, so far as they could do it within their limited time. It was with a feeling of some discouragement, that they found, on entering the Hall, such a vari-

* Fitch Poole of Danvers, Moses Hale of Newburyport, and Choate Burnham of Hamilton.

ety of articles submitted to their examination ; and they felt strongly the difficulties of a proper discrimination by which to make a just award to the contributors.

Among the articles exhibited was one, which, although by the rule of the Society not entitled to premium or gratuity, yet from the associations connected with it, the Committee deem worthy of more than a passing notice. This was a lady's *Cloak* and *Hood* a century and a quarter old ! It is made of scarlet cloth, of a superior fineness for that period, and is in perfect preservation. This venerable garment could not fail of exciting much interest, not only for its value as an ancient relic, but from the associations it must naturally excite in the mind of the visitor. On viewing such a relic, we are at once led to contemplate the changes which have taken place in the world since its existence. This veritable Red Riding Hood was doubtles worn in a former age by some blooming maiden, and was a familiar object in the streets, churches and dwellings of this City of Peace. Could she but now come back to us, and resume her ancient guise, with what interest would she witness the bright and active scenes of this joyous gala-day ! With what astonishment would she observe the moving throngs, the gay scenes, and crowded streets of this home of her youth ! What strange sights would meet her eyes in the altered architecture of the buildings, the change of localities, and the quaint dresses of the people ! How sadly would she miss the people, the customs, and the attire of her own palmy days !— Where, she would ask, are the dashing belles, with their high headdresses and hoop petticoats, who, on their wooden heeled shoes, once walked these pavements ? How would she be perplexed to find the uses of half the articles in this hall ! As a liege subject of King George II., she would naturally inquire after the Royal Family, and wish to know the present condition of the Colony of Massachusetts Bay. After hearing her expressions of surprise at the political changes of the country, let us conduct her to the interior of one of our dwellings. She is struck with surprise at the odd appearance and richness of the furniture, and at the same time puzzled to know the uses of many of the articles. Instead of the well sanded floors, she finds them covered with carpets. She finds an equable warmth through the house, but sees no fire, and the mystery is only solved when she feels a gush of warm air rise from an aperture in the floor. A young miss sits on a stool before a strange looking machine, where

she is pounding "Jim Crow;" and our friend kindly suggests to her that she would make better music on a spinning wheel, but she is informed that this household implement no longer exists. She goes into the kitchen, where, instead of the ample open fire-place, with its logs of green wood and crackling faggots, she sees an iron stove or cooking range, the fire of which is supplied with fragments of a kind of black stone, and she wonders how they contrive to make it burn. She wishes to light a lamp, and asks for a tinder box. They take a little stick and rub it on the wall, and forth comes *fire*. To her this is a greater mystery than was the lamp of Aladdin in the days of her fairy worship, and she starts back with affright.

She is informed that the people of this generation are accustomed to travel twenty miles an hour without horses, in carriages propelled by boiling water, and she is of course incredulous. We conduct her to the rail road, to see the cars come in from the East. She mutely watches the long train as it winds its way in the distance, wreathed in a black cloud of smoke. Now the iron horse comes prancing along with apparently increasing swiftness, and then with loud snorting and neighing, plunges with all his load of human freight into the bowels of the earth beneath the city! We, who have so long been familiar with this noble triumph of modern science and skill, will not wonder at her astonishment as she gazes into the smoky cavern where the train disappeared. We now tell her that by the same agency, ships cross the Atlantic in ten days, and she is better prepared to believe it. She asks if the letter post is despatched from Salem oftener than once a week, and we inform her that messages may be sent every hour to Washington, and an answer returned, while she is walking from Beverly bridge to Chestnut street. "Washington!—Beverly bridge!—Chestnut street!" she exclaims—she never had heard the names before. In fact, we had entirely forgotten that these localities had no existence in her day. She listens with surprise and delight to accounts of the great discoveries in Astronomy, by which Herschell, the Asteroids, Neptune, and a host of Satelites and Comets have been added to the family of our solar system. She hears not only of these, and other modern discoveries, but of the rapid diffusion of knowledge among the people, by means of the newspaper and periodical press, and cheap postage.

She had heard nothing of the art of amputating limbs without pain, of making portraits by sunshine, of firing guns without flint or

gunpowder, or of the art of exhibiting the characters of persons by feeling of the head, instead of watching the conduct. She was lamentably ignorant of Allopathy, Homeopathy, and Hydropathy—of Transcendentalism, Millerism and Mesmerism—and had never in her life heard of a Yankee baker, an omnibus, or a baby-jumper!

Let us not too hastily pity her for her ignorance of the really valuable discoveries and improvements of our age, but ask ourselves if they have not been attended with something of physical and mental effeminacy, which sometimes accompanies a high civilization, and whether we have as much of that stern adherence to principle and honest integrity, which formed so large an ingredient in the characters of our forefathers.

We now take an unceremonious and perhaps ungallant leave of our fair friend in the red riding cloak and hood, and with some fears that some may censure us, thinking our remarks in this connection partake more of fancy than fact. To such we can only say that we beg them to remember that we are a Committee on *Fancy* Articles.

In the dazzling display of a multitude of articles of beautiful handiwork, the Committee were much embarrassed in coming to a satisfactory decision, partly from the uncertain amount of means placed at their disposal. They were also embarrassed by the frequent difficulty of deciding between two or more articles of equal merit, so that they often found themselves in the unfortunate position of that famous donkey who starved himself to death between two stacks of hay, being utterly unable to decide which was the best. The committee in many cases escaped from this dilemma, by giving the same amount of gratuity to *both* articles. Had they not been wisely limited by the rules of the Society, they would have been tempted to fill all the bead purses of the fair contributors, and been willing to do the same with the numerous family of work bags and boxes, travelling bags and card baskets, which graced the exhibition. The committee remarked that most of the articles submitted to them were the product of *female* taste and skill, which they were compelled to admit were far in advance of the *male*. The committee are here reminded of another source of embarrassment, by which they were greatly annoyed, and which they think will compel the Society to appoint a committee of ladies to take charge of this department of the exhibition. This annoyance occur-

red by our ignorance of the names and uses of many of the articles exhibited. Many of these were portions of the dress and ornaments of the female toilet, about which, as became us, we knew absolutely nothing, and of which no dictionary or encyclopedia could enlighten us. Even when we knew both the name and proper use of the article,—a muslin cap, for instance—it was placing us in an awkward position to be obliged to decide on its merits without first trying it on. There would be serious objections to this mode of proceeding, not only from its obvious impropriety, but if a committee of members of the Society should so far forget their proper dignity as to put on the habiliments of the other sex, even for the innocent purpose of deciding on their quality, it might provoke a species of retaliation, which would most surely result in their abject submission.

The Committee beg leave to recommend to the Society the following articles as worthy of the premiums and gratuities severally annexed to them.

For the best specimen of work performed by a child under 12 years of age, exhibiting industry aud ingenuity, to Miss Maria E. Kimball, two Wrought Cushions, of Crewel Work, 1st premium, $3 00

For the second best specimen, to Miss M. S. Preston. 7 years old, Emery Toilet Cushion and Basket, 2d premium, 2 00

For the best specimen of Lace Work, to Mrs. J. Hodges, first premium, 3 00

GRATUITIES.

To Miss A. R. E. Sweetser, 12 years of age, for a Wrought Tarboret, crewel work, very beautiful, 2 00

Master Allen Dodge Bailey, under 12 years of age, exhibited a miniature Panorama, constructed on the principle of the large moving Dioramas, with a Drop Scene, showing great skill and ingenuity for a lad of that age, 2 00

A Work Box, painted by Mrs. E. C. Wheeler, in imitation of inlaid work—very beautiful, 1 00

Two splendid Cushions, of satin and velvet, finely wrought, by Mrs. John I. Baker, of Beverly, 2 00

Three Crickets, elegantly wrought by Miss L. W. D. Ordway, 1 00

One finely wrought Cricket, by Lucy A. Smith, Salem, 50

One pair of handsome Crickets, by C. C. Buffum, of Salem, 50

Miss Felton, of Salem, presented a fine Wrought Cricket, of velvet and satin, 50

One Wrought Seated Chair, by Eliza Chamberlain, of Salem, 50

One ditto, very fine, by Martha A. Foster, of Beverly, 50

One ditto, also very fine, by Miss Baldwin, of Salem, 50

One ditto, very neatly wrought, by Henrietta P. Allen, of Manchester, 50

Specimens of Mineralogy, very neatly formed in the shape of a Pyramid, by Miss Mudge of Lynn, 1 00

Shell Pyramid, by Miss Susan E. Magoun, 50

One pair Crewel Lamp Mats and one single, very fine, by S H. E. Cogswell, of Essex, 50

One Lamp Mat, very beautiful, by Miss M. A. Brown, 50

One ditto, by Miss Helen M. Snell, of Beverly, very neat and well wrought, 50

There were also elegant Lamp Mats presented by the following persons, to which the Committee would be pleased to bestow gratuities, if the means at their disposal would admit of it :—L. Neal, one mat; C. P. Kimball, aged eight years, one; F. B. Woodbury, of Newburyport, one pair; L. A. Luscomb, of Salem, one; Charles P. Luscomb, one; Mrs. Pulsifer, one; Mrs. G. D. Clark, of Salem, one; Mary Russell, of Salem, one; Lizzie P. Newhall, four; and others perhaps equally worthy of notice.

One Toilet Cushion, by Phebe B. Perry, of Bradford, extra fine and beautiful, 50

One Toilet Cushion, by M. S. Preston, aged 7, 25

One do by Harriet M. Dean, aged 9 years, 25

Others were presented by G. D. Clark, of Salem, Mrs. Adams, of Salem, Mrs. Hutchinson and Jane M. Dyer, all very beautiful.

Of Card Baskets there was a great variety, but all cannot be distinctly noticed. One by Elizabeth Browning, made of rice and sealing wax, 25

Others were also very neat, by Frances A. Henderson. Two of crewel work by Samuel Goodhue. One of glass, by Catherine C. Hutchinson. One of bead work, by G. Barton.

One embroidered Muslin Cap, made in two days, of materials costing 40 cents—by S. H. B. Osgood, of Essex, 25

One wrought stool covering, very fine, by E. R. Sherman, 13 years old, 25

One Bead Bag and Purse, very beautiful, by Miss C. Goodridge, of Danvers, 25

Other Bead Work, very fine, in Purses and Bags, were offered by J. S. Parrott, of Lynn, Mrs. J. L. Tillson, and Judith H. Lamson, of Beverly, to whom the committee regret they cannot bestow gratuities, for want of means.

Of other Fancy articles, very beautiful displays of Baskets, containing Flowers made from fish scales and marine shells; also a Picture Frame of Moss, were offered by Miss Morgan, of Salem, 1 50

Baskets of Sea Mosses, very tastefully arranged, and beautiful, by M. M. Nichols, 1 00

Artificial Flowers, by Miss Carolina Stiles, of Middleton, 50

A Shell Cottage, by Mrs A. Batchelder, of Lynn, 50

Strawberry Emery Cushions, very neat imitation, by Miss A. Roberts, of Salem, 50

Nine yards of Cotton Fringe, very nice, by Mrs. Henry F. Lee, of Manchester, 50

Knit Travelling Bag, by Mrs. Jane Page, of Danvers, 77 years of age, very well done, 50

Wrought Travelling Bag, a superior article, by Elizabeth M. West, of Salem, 50

A red Cloak and Hood, of ancient style and make, 125 years old, by Mrs. Israel Ward, of Salem. This is an interesting relic of olden time, and attracted much attention; but not having been wrought since the last exhibition of the Society, cannot, under the rules thereof, receive any gratuity.

A very pretty Moss Basket, by J. Barton, of Salem, 50

A Chair and Table Covering, most superbly wrought, by M. M. Nichols, 1 00

Braided Hair Work, Silk Fringe, and Buttons of Sewing Cotton, by Mary T. Goodhue, of Salem, very fine articles, 50

An Ivory Jagger Knife and File, made on a whaling voyage, by Mr. Wm. B. Carroll, of Beverly, a curious and unique article, shewing much ingenuity and skill.

One pair of Fancy Wrought Slippers, very fine, by Elizabeth M. West, and another pair of beautiful pattern, by Mrs. Henry Chase, of Salem.

Tidy, by Miss J. L. Parrott, of Lynn, and two ditto, by L. H. B. Cogswell, of Essex—all very superior.

One Ottoman, in form of a box, covered with fragments of kid, very ingenious and serviceable, by Carolne E. Neal, of Salem, 50

Mrs. Mary Flanders, of Newburyport, offered three Card Baskets of Cloves; two Lamp Mats, by a girl of 10 years; one little Chair of Silk, and two bunches of Flowers in crewel work, 1 00

D. Stiles, Jr. of Middleton, exhibited specimens of Horse Shoes, of very neat workmanship and superior finish, 1 00

Lard Candles, of superior quality, were exhibited from the factory of C. Smith & Son, of Salem.

Pickles and Pickle Vinegar, from S. Symonds, Salem. The vinegar is colourless, and very strong and pure, and the pickles put up in good style.

A fine exhibition of Perfumery and Extracts of Ginger, put up very neatly, was made by G. Barton, of Salem.

A Combination Lock, of very ingenious construction, was offered to the inspection of the Committee, which seems to be absolutely burglar proof. It is called Butterworth's Patent Combination Lock.

Among the Fancy Articles were "three White Mice," presented by some person unknown. They were very lively animals, but as no premium is offered by the Society for this kind of stock, the committee took no other notice of them than to "see how they ran."

All of which is respectfully submitted by your Committee.

FITCH POOLE,
CHOATE BURNHAM,
MOSES HALE,

Salem, Sept. 27. 1849.

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## ON FRUITS.

The Committee on FRUITS would respectfully REPORT:

The exhibition of Fruits, at the Annual Show of the Society, at the Franklin Hall, was superior to any former one, in numbers, although the Apples were not so fine in specimens as in previous seasons, as fruit had been so generally cut off in this section. It exceeded however the expectations of the Society. The show of native

Grapes was fine, and the fruit committee had a fine opportunity to to test the merits of the several varieties. The "Mammoth Grape" of Mr. Carter, of Lowell, was found to be in flavor inferior to the variety of Rev. Mr. Perry, of Bradford, and decidedly so, in comparison with that of Mr. John Adams, of Newbury, the latter of which the committee considered the best variety in flavor, and as the finest native "Essex County Grape," they have as yet seen. There were seventy contributors of Fruit, being one third more than at any former Annual Exhibition. The "Mammoth Grape," so called, by Mr. Carter, who introduced this sort here the past season, closely resembles a variety which we saw, some six or eight years since, at the farm of the late Mr. Abel Nichols, in North Danvers. The berries were large, nearly round, and of a dark amber or light brown color, skin thick, and pulp firm. The generous premium offered by our Society, for a native grape which "shall ripen in our county, in the open air and in common exposures, from six to eight weeks earlier than the Isabella, *and of as good quality*," having produced so good a beginning as we observed at the Hall on Thursday, we trust that such a desideratum may yet be obtained. The grape from Mr. Adams, although the best of the foxy flavored New England variety, has that peculiar unpleasant flavor in some degree, in this otherwise good grape.

We feel obliged to some few contributors from Somerville and North Reading, for their fine fruit, but were under the necessity of precluding them from the gratuities, as being out of the county.

There were seventy entries of fruit upon the tables, from which the Committee, with some difficulty, awarded the following gratuities:

Moses Pettingill, of Topsfield, Stephen Driver, Jr. of Salem, Messrs. Lakes, of Topsfield, John Adams, of Newbury, Moses French, of Salisbury, $2 00 each

Ezra Cleaves, of Beverly, A. D. Rogers, of Salem, E. Emmerton, of Salem, A. Lackey, Jr. of Marblehead, 1 50 "

James Upton, J. S. Ives, J. M. Ives, W. C. Barton, of Salem, H. Poor of Andover, G. B. Perry, of Bradford, 1 00 "

D. Roberts, W. D. Pickman, W. Stearns, E. B. Perkins, of Salem, 75 "

B. P. Ware of Marblehead, D. Putnam of Danvers, Dr. Torrey of Beverly, J. H. Phippen, Winthrop Sargent, J. A. Goldthwait, F. Putnam, of Salem, E. R. Mudge, Sally New-

hall of Lynn, B. Symonds of Danvers, Jonathan Berry of Middleton, G. Wilson of Marblehead, G. W. Gage of Methuen, W. Ashley of Newburyport, 50 each

John Stevens of Andover, F. Dodge of Danvers, D. Adams of Newbury, G. D. Phippen, John Nichols, N. Kelly, Eben. Dodge, J. A. Dodge, Joel Bowker, of Salem, O. Tittle of Beverly, G. W. Chase of Amesbury, J. H. Downing of Lynn, 25 each

For the Committee,

JOHN M. IVES, Chairman.

Salem, Sept. 27, 1849.

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## ON VEGETABLES.

The Committee on VEGETABLES have attended to the duty assigned them, and REPORT the following gratuities, viz:

| | |
|---|---|
| B. Titcomb of Haverhill, 15 varieties of seedling Potatoes, | $3 00 |
| J. M. Ives of Salem, collection of Vegetables, | 1 00 |
| James Upton of do., Onions, | 25 |
| S. B. Nichols of do., first and second crop of Potatoes, | 50 |
| J. Bradstreet of Danvers, Seedling Potatoes, | 50 |
| Adam Nesmith of Beverly, 3 varieties Seedling Potatoes, | 1 00 |
| N. S. Thissel of Beverly, Cabbage, | 25 |
| John Trow of Hamilton, Squashes, | 25 |
| George H. Batchelder, do. | 25 |
| Jas. Ropes of Salem, Barker Potatoes, very fine, | 50 |
| W. D. Pickman of Salem, variety of Vegetables, | 50 |
| G. A. Fairfield of do: Blood Beets, | 25 |
| Francis Dodge of Danvers, California Squash, | 25 |
| do. do. do. Seed Corn, | 50 |
| H. Poor of Andover, samples of Wheat, Barley and Corn, | 1 00 |
| Moses Pettingill of Topsfield, Seedling Potatoes, | 50 |
| do. do. do. Corn, | 25 |
| Daniel P. King of Danvers, Calico Corn and Egyptian Corn, | 50 |

Abel Burnham of Essex, Seedling Potatoes, black Sea Wheat and Corn, 75

E. Griffin of Newburyport, Louis Philippe Squashes, to appearance very fine, 1 00

For the Committee,

HORACE WARE, Jr.
WM. OSBORN.

Salem, Sept. 27, 1849.

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## ON FLOWERS.

Within the past few years, Horticultural Societies have been organized in several towns or cities of this commonwealth, and have, at stated periods, had exhibitions of fruits and flowers. Many of the county agricultural Societies have likewise made arrangements for exhibitions of a similar character, during the time of holding their annual fairs, at those places where the horticultaral part of the exhibition is not under the direction of a society more especially devoted to these objects.

These exhibitions have been well sustained, and form a very important feature of these interesting festivals. The halls are always thronged with crowds of visitors, who are attracted thither by the display of the fine fruit and beautiful flowers that are tastefully arranged on the stands and tables.

Much good has resulted from these shows—a growing taste is rapidly spreading, and an increased attention is evidently given to the cultivation of these the choicest of Flora's and Pomona's treasures, throughout our community, particularly in the vicinity of our large towns and cities. These latter places are undoubtedly the great centres from which will radiate in all directions whatever tends to exert an influence on society.

Your committee recommend that this society should encourage the diffusion of this taste, and should not cease their exertions until every cottage in our county shall be surrounded with its parterre of beautiful flowers, and its gardens and orchards well stocked with the choicest fruit trees. This can be effected with trivial labor or expense

on the part of the farmers—a few days occupied by them in the spring to put the grounds in a suitable condition, and a small expenditure for the seeds, plants, &c. are the only necessary outlay: the principal part of the labor afterwards will be cheerfully borne by that portion of the family who are not occupied with the more laborious duties of the farm. This will not only tend to make home pleasant and agreeable—thereby cultivating a more social feeling among the several members, but often can be made a source of profit. A few dollars and a little time spent occasionally in this manner, will greatly enhance the value of the estate, and render the same more desirable to purchasers.

Every one in selecting a place of residence in the country, would prefer to procure one that has a neatly arranged garden, with its patches of green, borders of flowers, clumps of shrubbery, shade trees—and last, though not least, thrifty orchards—than one of those neglected and cheerless spots, that too often greet us as we journey throughout the country.

This season, the Essex Institute omitted their annual exhibition of Fruits and Flowers, and directed their influence towards rendering the one held under the auspices of this society the more attractive and interesting.

The lovely flowers of spring—the more fragrant and attractive ones of summer—have passed and gone; and they are replaced by the more sombre, yet in some respects, more showy flowers of autumn—these, with a few exceptions, are all that remain to grace our stands and to decorate our tables at these annual exhibitions. Of these, the most conspicuous is the Dahlia. This flower, so infinite in its variety, is a great favorite with our gardeners and amateurs, on account of its furnishing in abundance at this season of the year a long succession of blooms. Fine specimens were exhibited by Abiel Wales of Beverly; Hazen Messer of Methuen; Miss Susan H. Ropes, F. Putnam, John W. Downing, Thorp Fisher, Eben Buswell, George Driver and S. Webb—all of Salem.

Francis Putnam of Salem, exhibited many and choice varieties of those beautiful Roses, the Noisettes, Teas, China, Bourbons and Hybrid Perpetuals. This last class of Roses are perfectly hardy, and are obtained by hpbridiration between the common June and China Roses. They are deserving of a more general cultivation, in consequence of being perpetual bloomers, and ornamenting the gardens

with a continual succession of these favorite flowers during the latter part of summer and autumn. Their appearance in the parterre contrasts strangely, though pleasingly, with the autumnal flowers; and is continually reminding us of the last roses of summer lingering in the lap of autumn.

William Weeks of Salem, presented a collection of Chinese Asters, Stocks, Pansies, &c. Stephen Driver, Jr. of Salem, large and very beautiful specimens of Coxcombs in pots; William D. Pickman of Salem, exhibited a beautiful pyramidal Bouquet of Cut Flowers—also fine and large specimens of Coxcombs in pots. Bouquets of Cut Flowers from Miss E. R. Mudge of Lynn; G. W. Gage of Methuen; F. H. Wade of Ipswich; Miss C. Andrews, Miss R. S. Ives, Miss S. H. Ropes—all of Salem. F. Lamson of Salem, exhibited a plant of Salvia Splendeus; Josiah Hayward of Salem, a plant of Cactus Speciosissimus in fruit.

Several large and very beautiful Bouquets, composed of dry grasses, mosses, Gnaphaliums, &c. &c. made into various fanciful shapes, were contributed by Mrs. W. H. Atkinson, Miss S. J. Atkinson, Miss Lydia C. Atkinson, Miss E. L. Delano and N. Bowles, all of Lynn; N. B. Harris and Miss E. Mann of Salem; and Miss Susan B. Shove of Danvers.

A very fine Thistle Bouquet, from Mrs. W. H. Atkinson of Lynn.

Your Committee have awarded gratuities for Flowers to the following individuals:

| | |
|---|---|
| To Abiel Wales of Beverly, for Dahlias, | 75 |
| To John W. Downing of Salem, for Dahlias, | 75 |
| To Thorp Fisher do do | 75 |
| To George Driver, do do | 75 |
| To Eben Buswell, do do | 75 |
| To Miss Susan H. Ropes, do do | 50 |
| To Hazen Messer of Methuen, do | 25 |
| To Francis Putnam of Salem, for Roses, | 1 00 |
| To William Weeks of do for Asters, &c. | 50 |
| To Stephen Driver, Jr. of Salem, for Coxcombs, | 50 |
| To W. D. Pickman, of do for Bouquets, &c. | 1 00 |
| To Miss Sarah H. Ropes, of do for do | 50 |
| To Miss E. R. Mudge of Lynn, do | 75 |
| To G. W. Gage of Methuen, do | 37 1-2 |
| To F. H. Wade of Ipswich, do | 50 |

| | |
|---|---|
| To Miss R. S. Ives, of Salem, boquet, | 50 |
| To Miss C. Andrews, do do | 37 1-2 |
| To Mrs. W. H. Atkinson, of Lynn, for a thistle and grass Boquet, | 1 25 |
| To N. Bowles, of Lynn, grass Boquet, | 75 |
| To N. B. Harris, of Salem, do | 75 |
| To Miss S. J. Atkinson, of Lynn, do | 50 |
| Miss Lydia C. Atkinson, of do., do. | 50 |
| To Miss Susan B. Shove, of Danvers, do. | 50 |
| To Miss E. L. Delano, of Lynn, do. | 50 |
| To Miss E. Mann, of Salem, do. | 37 1-2 |

Respectfully submitted.

HENRY WHEATLAND,

For the Committee on Flowers.

Salem, Sept. 27, 1849.

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## ON FAT CATTLE.

The Committee on Fat Cattle, REPORT;

That there were seven entries for premium, and after a full examination, they have awarded

| | | | |
|---|---|---|---|
| First premium | to | James A. Putnam, of Danvers. | $10 00 |
| Second do | to | Richard Knight, of Newbury, | 8 00 |
| Third do | to | Joseph Kittredge, of Andover.. | 5 00 |

For the Committtee,

JOHN NORTHEND.

Salem, Sept 27, 1849.

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## ON WORKING OXEN.

The Committee on Working Oxen REPORT:

That twenty yoke of Cattle were offered for premium, most of which did their work very well.

The Committee have made the following award of premiums:

To Jonathan Berry, of Middleton, the 1st premium, 10 00

| | |
|---|---|
| William Foster, of North Andover, the 2d premium, | $8 00 |
| John Washburn, of Lynn, the 3d premium, | 6 00 |
| William Sutton, of Salem, the 4th premium, | 4 00 |

Respectfully submitted by

J. KITTREDGE, for Committee.

Salem, Sept. 27, 1849.

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## ON BULLS.

The Committee* on BULLS respectfully REPORT:

Twelve Bulls were entered for premium, but only eleven were found on the ground by your committee. These they carefully examined, and made up a very favorable opinion of the merits of several animals, other than those to which they awarded the premiums. There was no difference of opinion as to which should be given the *first* premium. But which was best entitled to the others, was a matter not so easily and readily to be determined; and in coming to the final result, the committee felt very far from entire confidence in the correctness of their judgment. When the merits of different claimants are very nearly balanced, the right or wrong decision of the question of superiority, is almost of necessity an accident, and in giving the preference to one, another must be passed by, which in some one point or more, may be his superior. After due deliberation, however, it was concluded that the yearling Bull of Henry Poor, of Andover, was entitled to the first premium of $7 00

The Bull of Samuel Thompson, of Haverhill, two years old, to the second, 6 00

And the yearling North Devon Bull of Joseph Kittredge, of Andover, to the third, 5 00

Naturally and intimately associated with our report, is the subject of "improving the Breed of Cattle." A remark or two upon that subject may be neither uninteresting nor out of place. The importance of a more thorough knowledge, of clearer ideas upon it than we now have, is apparent to every body. In fact, no such thing as

*Present, T. E. Payson, George French, Joshua L. Newhall, Samuel H. Green, and Benjamin P. Ware.

breeding stock as an art, is known among us; and the man who has the credit of being a stock-raiser, generally gets it because he has a greater number of half starved calves than his neighbors, and in whose stock there are as many varieties of shape and color, as there were in the stock of Jacob, when he separated from his father-in-law. Every imported bull, that happens to come in his neighborhood, no matter what his blood, nor what the blood of his cow—is crossed with his stock. Now although crossing in any way is preferable to breeding in and in, yet this indiscriminate crossing will never, to any extent, improve our stock. If we get a good cow, it is the result of accident—mere chance. Experience so far, has shown that importations from abroad, and the crossing with them, have in no way benefitted our milch cows. They may have furnished us better oxen in some respects; but they have not yet helped us to any more butter and cheese.

Your committee are of opinion, that the only successful mode of improving our stock, is by a judicious, systematic, enlightened attempt, which has for its basis the native stock of the country. And it is only by an enlarged view of this, or any other matter connected with nature, that we can arrive at the truth. The advantage of crossing has been spoken of; but let it be remembered, that if you expect good from it, you must bring together animals, *not nearly related*, but of the same breed. Nature is uniform in her operations. Wild animals of a particular breed are generally of the same shape and color. Flowers resemble each other. But by man's intervention, the beast, the bird, the flower, are made to assume new colors and forms. If these changes are of value, they must be the result of sound judgment, enlarged views, enlightened experience, and a complete knowledge of the principles upon which nature operates.

Until these are attained, you may spend money, you may import stock, you may offer premiums, and no more benefit be derived from it, than has been from what has been done by this and other societies for the last thirty years. We have no better cows now than we had then—we have no larger proportion of them—and in our breeding, whether or not the calf which we raise, will make a good cow, or be good for nothing, is all mere chance.

The State Society have, with a zeal worthy of imitation, in most respects, made efforts to improve the stock of the country. But has that zeal been entirely according to knowledge? Can they put their

finger on any point, and say, in this respect at least we have made some progess? It may be that your committee have not full knowledge on this subject; but we are satisfied that if the stock "which boasts of a long line of ancestry of the purest and most approved breeds," and is not tainted with a drop of "ignoble blood," is not more productive, so far as the dairy is concerned, than it is generally reported to be, it is better adapted to a royal than a republican territory. In conclusion, we hesitate not to say, that we have the elements of as good milch cows, as there are any where, and that if men who have the means, will apply science and enlightened judgment to their developement, instead of going abroad for cows, we can furnish better of our own, than can be found elsewhere in the wide world.

For the Committee,

T. E. PAYSON.

Salem, Sept. 27, 1849.

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HENRY POOR'S STATEMENT.

*To the Committee on Bulls:*

GENTLEMEN,—I offer for premium a Bull, eighteen months old, weighing 1052 pounds. He is the third calf from a cow having produced a heifer for which $100 was offered when three years old. His origin is partly of the Vaughn stock, imported, and scattered on the Kennebeck river, many years since, which has been crossed partially by the Durham, mixing the two with the native breed, and producing the best stock driven to our market, as all dealers will attest.

He probably is more of the native than any other blood; hence I call him the "New England," as being appropriate to his pedigree, and in harmony with my views of the value of Native American Stock.

He has been kept on ordinary pasture feed; his growth has been about twelve pounds a week, as we have weighed him from time to time; but he has never been forced in his growth. During the season, he has served about twenty cows.

Respectfully, H. POOR.

North Andover, Sept. 26, 1849.

## ON MILCH COWS.

The Committee on MILCH Cows make the following REPORT:

Seven Cows were entered for premium, and as many more for exhibition. The milk of all the cows entered for premium was sold as taken from them, only one having any definite statement of the quality of her milk. The cow of Horatio Bodge, of Danvers, gave an average of fourteen quarts per day, from June 1st to Sept. 27th. And from the milk was made, in one week, fourteen pounds eight ounces of butter.

The committee were of opinion that she was more than ten years old; therefore, by the rules of the Society, she could not be entitled to a premium. Two others were excluded for the same reason. Ebenezer Rogers, of Rowley, entered an Ayrshire cow, with a calf one week old. No statement of the quantity of her milk accompanied her. She was therefore not entitled to a premium.

Of the cows entered for exhibition only, were two fine looking animals belonging to Daniel Buxton, Jr. of Danvers. Their docile appearance, good form and color, and right proportions for milking qualities, particularly attracted the attention of the committee. There were no better looking animals of the kind in the pens.

After a careful examination of all the cows entered for premiums, and of the statements accompanying them, the committee were of opinion that no statement in regard to the quantity and quality of the milk, came fully up to the rules of the society, and that no one was entitled to the first premium.

They award the second premium of 9 dollars to Wingate Merrill, of Danvers.

The third, of 8 dollars, to Enoch Page, of Danvers.

And the fourth, of 7 dollars, to Frederick Burnham, of Manchester.

Respectfully submitted, for the Committee,

DEAN ROBINSON, Chairman.

Salem, Sept. 27th, 1849.

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WINGATE MERRILL'S STATEMENT,

*To the Committee on Milch Cows:*

GENTLEMEN,—The cow I offer for premium is eight or nine years old. I have owned her two and a half years. Her calf was killed

the 13th day of June, when twenty four days old—was fat, and weighed 112 pounds, dressed.

I have kept an account of her milk, as follows:—from June 13th to July 13th, 30 days, 1380 lbs. Average per day, 46 lbs.

From July 13th to Sept. 27th, 76 days, 3040 lbs. Average per day, 40 lbs. She gives 39 lbs. a day now.

Her feed has been common pasture, with three other cows. She has been milked between four and five o'clock all summer, and has remained in the barn at night, with a foddering of hay. She has had no grain of any kind. I set the milk for butter one day, and made from it 2 pounds 2 ounces.

WINGATE MERRILL.

Danvers, Sept. 27th, 1849.

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ENOCH PAGE'S STATEMENT.

*To the Committee on Milch Cows:*

GENTLEMEN,—I offer for premium one native cow, 4 years old. Her milk, for the last twenty days, has weighed 738 lbs., making 13 3-4 quarts per day. She had a calf the middle of July last.

ENOCH PAGE.

Danvers, Sept. 26, 1849.

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FREDERIC BURNHAM'S STATEMENT.

*To the Committee on Milch Cows:*

GENTLEMEN,—The cow which I enter for premium, is seven years old, and has been owned by me over a year. She calved the 17th of March last, and will have her next calf the first of March next. She gives her milk till the time of calving. At the height of feed, for three weeks in June, she gave an average of 15 1-2 quarts per day. Previously to that time and since, her average yield has been thirteen quarts per day. Last year, I sold from her, besides what I used in the family, $105 worth of milk, at 4 cents per quart, from May 20th to Nov. 20th; and at 5 cents the rest of the year. The calf I sold at $5 25. She has been pastured with another cow this

season, in two fields, containing less than two acres, that have not been under plough for ten years. Excepting a fortnight's feed elsewhere, and a little fodder from the garden, this has been all her feed.

FREDERIC BURNHAM.

Manchester, Sept. 21, 1849.

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## ON HEIFERS.

The Committee on Heifers respectfully REPORT:

The number of Heifers offered for premium is uncommonly large, being about forty. So many good animals were presented, that the Committee have had some difficulty in deciding exactly upon their respective merits. They believe however they have done justice in awarding the following premiums.

| | |
|---|---|
| For Heifers in milk, 3 months or more, first premium to Hiram L. Roberts, Beverly, | $7 00 |
| Second premium to Richard Hawkes, Saugus, | $6 00 |
| Third premium to Stephen Whitmore, Jr., Salem, | 5 00 |
| For two years old Heifers, 1st premium to A. B. Lord, Beverly, | 5 00 |
| Second premium to J. T. Haskell, Beverly, | 4 00 |
| Third premium to Isaac Stanley, do. | 3 00 |
| For Yearling Heifers, first premium to Benjamin Kidder, Saugus, | 4 00 |
| Second premium to John Stone, Jr., Marblehead, | 3 00 |
| Third premium, to John Reynolds, Andover, | 2 00 |

For the Committee,

JOHN ALLEY, 3d, Chairman.

Salem, Sept. 27, 1849.

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### HIRAM L. ROBERTS'S STATEMENT.

*To the Committee on Milch Cows:*

GENTLEMEN—The heifer that I offer for your inspection was purchased by me in November, 1838, and was three years old in April following, and brought her first calf February 16th, 1849. Her feed

up to the time of her calving, was meadow hay only, after that English hay. Her calf was sold when three weeks and three days old; she then gave eleven quarts of milk per day. She went to pasture May 19th, and had no hay afterwards, and was what good farmers would call in very poor flesh. She was fed with one quart of corn meal per day, for seven successive days only, after being turned to pasture. The first fourteen days in June she produced 15 pounds of butter, besides sufficient milk and cream for the use of a family of five persons. The third week in June her milk measured 85 quarts, given in seven successive days, and produced 10 pounds of butter, churning from the cream. After that time no correct account was kept of her milk or butter, until September 16th, when her milk was again measured for seven successive days. It measured 64 quarts and produced 7 1-2 pounds of butter, once worked over and salted, her feed being a mowing field, that she had been in about two months, containing about 3 1-2 acres.

HIRAM L. ROBERTS.

Beverly, Sept. 26th, 1849.

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## ON STEERS.

The Committee on Steers have directed me to REPORT:

Three entries for two year old Steers,—one pair by John Porter, of Beverly; one by David S. Caldwell, of Byfield; and one by Jedediah H. Barker, of Andover.

There were two pair of yearling Steers,—one by Moses Pettingill, of Topsfield, and one by Joshua Goodridge, of Salem.

They have agreed to award the first premium of $6 to David S. Caldwell, for his two year old Steers, and the second premium of $4 to Jedediah H. Barker.

For yearling Steers, they award the first premium of $4 to Joshua Goodridge, and the second premium of $3 to Moses Pettingill.

For the Committee,

MOSES NEWELL.

Salem, Sept. 27, 1849.

## ON COLTS.

The Committee on Colts having attended to their duty, REPORT:

Twenty-four Colts were entered for premium, from one to four years old. Some were not in the pens, and others had no attendants to show them, or give any account of their training or pedigree.

As there were but four premiums to be distributed, one to the best Colt of each class respectively, they recommend the following award, viz;

For the best four years old Colt, to Rufus Pray, of Newbury, $10 00
For the best three years old do., to Baily Loring, of Andover, 8 00
For the best two years old do., to Nathaniel Boardman, of Danvers, 6 00
For the best yearling Colt, to Samuel Tucker, of Hamilton, 4 00

We cannot leave the interesting subject of the horse, without a word or two upon the importance of this animal to the public; of encouraging the raising of the best kind, and the best mode of training.

Of all our domestic animals, the horse stands in the foremost rank. Although steam and railroads have lessened the necessity of his aid, they have not lessened his value in the market, or the pleasure which he still affords to those not so much bent on business and gold, as amusement and healthy exercise.

The labors of the horse seem to be changing from year to year, and have in some degree been mitigated. If we look back but a few years we find him travelling the bark-mill from morning till night, and before the invention of steam engines and railroads, he was destined to perform the very arduous labors of the stage coach, in the duties of which, from high feeding and hard driving, he was soon worn out. But the modern application of steam, seems to be sent in mercy for his relief. If steam has not entirely superceded the use of the horse for the work, it has certainly very much curtailed the requirement of this kind of labor. He is now mostly used for pleasure riding, and short excursions, requiring the cultivation of different features and qualities than those heretofore demanded. Speed and activity are the qualities sought for now, in place of strength of body and limb, which are better fitted for the draft.

The horse is susceptible of the most perfect training, and can be made to know your wishes almost before they are expressed, and possessing great activity and strength, when properly encouraged, will

use them to the utmost of his power. The attachment of the horse to his master is well known, and a reciprocity of feeling between the horse and his keeper is frequently very great; but we are sorry to know he is sometimes most grossly and wantonly abused.

The horse though, when kindly treated, will manifest great attachment and perfect obedience, submitting to severe labors, will sometimes exhibit great and provoking obstinacy. This leads to cruelty, and sometimes unmerciful beating.

From experience and observation, we are fully satisfied that whipping only increases the difficulty, and makes him more obstinate. Although it is somewhat difficult to command one's temper when the horse, knowing your wishes, persists in refusing to obey, still I am satisfied that kindness will sooner bring him to obedience, than an opposite course of treatment.

When in full health and plight, he will be as fond of moving forward as you are to have him do so. A little patience is much better than the whip. We once asked a horse dealer how we should manage a contrary horse? He replied, "Never let him know but that he behaves just as you want to have him."

Horses are often made vicious in breaking, as it is called, and in training, when young, by bad management. In breaking colts into the harness, they should never know that they can break away. When convenient, the younger you begin with them the better. Accustom them gradually to the halter and harness.

The halter, in the first place, should be so strong that they cannot break it when made fast to a substantial post. They will seldom try its strength more than once or twice; and the same with any part of a harness. If they find they can break a halter, it is seldom forgotten, and becomes a very vicious habit. After two years old, they may be placed by the side of a steady horse, and afterwards in a light carriage, followed up every day for some little length of time. In shoeing the first time, be sure you get a good strong smith, that will hold the foot as long as he wishes; not too long at first, least he should be weary. Horses are not unfrequently very troublesome through life by a fault in first shoeing.

The signs of a good road horse, and for speed are, a small head, a short back, and flat legs. Something may be known by the countenance, which cannot well be described. A bright full eye, wide nostrils, and a projecting wide forehead, may be considered some of

the signs of courage and long wind. The color of horses depends somewhat upon fancy; but bay, dapplegray and black are the most preferred in our county.

The three greatest and most common faults to which horses are liable, are stumbling, kicking and shying. We know of no remedy for the first. The second may be avoided by using him to the harness about his haunches and head, when out of the carriage, and when he can do no mischief. Shying may be quite benefitted, if not cured, by stopping and moving slowly by the object, instead of urging the horse to breast it at once.

The Arabian breed of horses are attracting some attention in our county. They have not yet come to years quite sufficient for use. They promise speed, courage, docility, and an exemption from most of the principal faults of road horses.

The growing of this kind of stock in our county is, at the present time, receiving great attention, if we may judge from the number at the show. We believe it to be as profitable as any other stock, as very few horses, at four years old, are worth less than from 75 to 100 dollars. The demand and the value have not lessened, but rather increased, since the introduction of railroads.

Now let us bespeak for this noble animal kind treatment, good keeping, and light burthens. With such gentle usage, the horse will love and serve you faithfully for twenty-five, forty, and even fifty years. Do not maim or disfigure him by the cruel practice of pricking, nicking, or even cutting off a single hair, which the author of nature has furnished him with, for his special accommodation. And good taste will require, that in his natural garb and form, he actually shows the best, and is the most comfortable to himself. Curry and groom him every day, and give him a blanket and a warm stable in cold weather, and clean straw to lie on. Talk to, and with him, for he will soon understand your language, and manifest signs of recognition, or the tenor, at least, of your words.

Horses like to be petted, and words of encouragement, we will again repeat, are better under all circumstances, than the whip.

For the Committee,

R. A. MERRIAM.

Salem, Sept. 27, 1849.

## ON SWINE.

The Committee on Swine having attended to the duties assigned them, REPORT:

The whole number of Swine entered for premium, was sixteen, viz:

One Boar, by Thomas E. Payson, of Rowley.

One do. 9 1-2 months old, (full blood supposed,) by William G. Lake, of Topsfield.

One do. by Jeseph Kittredge, of Andover.

One Pig, sixteen weeks old, by T. E. Haskell, of Beverly.

One do. by Henry Poor, of Andover.

One do. by Hiram L. Newhall, of Lynnfield.

One Breeding Sow, three years old, and five Weaned Pigs, five months, twenty-seven days old, by Hiram L. Newhall, of Lynnfield.

Two Weaned Pigs, five months old, by Thomas G. Dodge, of Newburyport.

Two do. do. thirteen weeks old, by Peter Obear of Beverly.

One do. do. by John Stone, Jr., of Marblehead.

Your Committee having examined the animals presented to their notice, with as much care as the short time allowed them would admit, have awarded the following premiums, viz:

| | |
|---|---|
| To William G. Lake, of Topsfield, for his Suffolk Boar, the first premium of | $5 00 |
| To Joseph Kittredge, of Andover, the second premium of | 3 00 |
| To Hiram L. Newhall, of Lynnfield, for the best breeding sow, the first premium of | 5 00 |
| To Hiram L. Newhall, of Lynnfield, for the best litter of Weaned pigs, the first premium of | 6 00 |
| To Thomas G. Dodge, of Newburyport, for the best Weaned Pig, the first premium of | 4 00 |
| To John Stone, Jr., of Marblehead, for a Weaned Pig, (Chester breed) the second premium of | 2 00 |

Your Committee regret that there were but two premiums for each class of animals at their disposal, as it was not easy to discriminate between animals so nearly alike.

For the Committtee,

Salem, Sept 27, 1849. LEWIS ALLEN.

LETTER FROM LEWIS ALLEN Esq.

DANVERS, Nov. 17, 1849.

DEAR SIR:—According to promise, I now send you the result of my experiment of keeping Swine, the past season, for the purpose of increasing the manure heap, which is as follows, viz:

On the 13th of April last, I bought ten pigs, and on the 23d five, making fifteen in all. Their average weight was 144 pounds, making 2160 lbs., at 6 cents, $129 60

I fed them on dry corn and water principally; occasionally I gave them shorts and water, and the waste from the house, which was a small item, as we make butter only for family use.

I fed to them 220 bushels of corn, for which I paid, delivered, $130 00

and 30 bushels of shorts at 23 cts., 6 90

$136 90

$266 50

I sold them in September for 7 cents per pound, the purchaser paying for killing. Commenced killing them on the 19th September, but owing to the warm weather, did not kill them all until the 17th of October. The fifteen weighed when dressed 3951 lbs, at 7 cts. per lb., $276 57

Profit, $10 07

Now for the manure heap. In the first place I will tell you what they had to work upon, and the kind of place to work in. I fenced off a yard adjoining my barn, about eighteen by fifty feet, so constructed that I could drive in at one end and out at the other with a team and plough it, or cart in materials, as occasion required. I ploughed up the soil in the yard, and when the hogs had made it rich and worked up fine, I then covered the yard to the depth of ten or twelve inches with meadow mud or peat. When this was well incorporated with the soil and manure and become soft, I spread over it a quantity of coarse stable manure, and when this became well mixed, added mud and manure as before, until I used three cords of manure, for which I paid $4 00 per cord.

I estimate the quantity of manure made, full one cord for each hog, say 15 cords, which is worth at least, $4 50 per cord, $67 50

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|---|---|
| Credit three cords stable manure at $4 00 per cord, | $12 00 |
| | $55 50 |
| Profit on Pork, | 10 07 |
| Making | $65 57 |

which I get for feeding, interest on outlay, carting, materials, &c. I do not know of any way that I can obtain the same quantity of manure any cheaper than by the process above mentioned. If you can inform me of any better mode of increasing this most important article to the farmer, you will greatly oblige

Yours respectfully,

LEWIS ALLEN.

To Allen W. Dodge, Esq.

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## ON SHEEP.

The Committee on Sheep ask leave to Report:

That only one entry was made in this department, viz: that of seven sheep and two lambs, by Joseph Kittredge, of Andover. On examination, they found the lot to consist, as they judged, of six sheep and seven very fine lambs. Some of the sheep were, in the opinion of the committee, excellent, and the others of fair quality. Taking the lambs with the sheep, which the committee felt authorized to do, they found a sufficient number of very fine animals to entitle Dr. Kittredge to the first premium of seven dollars; and they recommend that it be so awarded.

For the Committee.

ANDREW DODGE.

Salem, Sept. 27, 1849.

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## ON FATTENING CATTLE AND SWINE.

The Committee appointed to report on the best method of fattening Cattle and Swine, would offer the following as their views on the

subject—(the present year there has been no application for premium) :

Select the best formed cattle, from five to eight years old, of quiet disposition and good appetite, inclining to fatten. After the spring work is over, commence giving them the best pasturage during the summer, also the best fall feed until they come to the barn ; then feed them with good hay and Indian meal, at first from one to two quarts per day, gradually increasing till six or eight quarts are given, until they are slaughtered, or about fifteen bushels of meal to each animal. This process furnishes the largest weight, the best quality of beef, commanding the highest price in the market, and at the present prices, a profit to the owner.

Also, with respect to fattening swine—select those weighing about 100 pounds, which will cost about $5 00 each, purchasing corn at the common rates. Keep them in a large roomy yard, with a good supply of loam from the road-side and muck from the swamp, giving them a dry room to lodge in. Feed them with three quarts of corn per day for one year. This will give 400 pounds of good pork, which has usually paid for all the corn and the first cost of the animal ; and what is taken from the yard will pay well for all the labor which has been expended.

For the Committee.

JEREMIAH COLMAN.

Newburyport, Nov. 9, 1849.

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## ON COMPARATIVE VALUE OF CROPS, &c.

Report of the Committee on Compartive Value of Crops as Food for Cattle :

It may again be said, as it has been in former years, that there has been no application for premium on this important subject.

I am aware that it is somewhat difficult on this, as on many other subjects in regard to farming, for a person to try an experiment which will be fully satisfactory to himself, there are also many causes operating, and which must be taken into the account. This, however, should not deter us from trying experiments, for it is the only way to get correct information.

The committee last year (of which I was a member) expressed some doubts as to the value of green corn stalks as food for milch cows. This has led to careful observation, and some experiments on the subject.

In consequence of the dry weather, and increasing the number of my cows, the feed in my pasture was unusually short. About the middle of August I commenced feeding with English hay, in addition to the feed of the pasture. I weighed the milk of four cows for three successive weeks. The first week they were all fed on hay. The second week, two were fed on hay, the other two on green corn stalks. The third week, those that had previously been fed on hay, were fed on corn stalks, and those that had been fed on corn stalks were fed on hay. The hay used was cut early, and of superior quality. Some of the cows were more fond of hay than stalks, and others were more fond of stalks than hay. Having carefully observed the manner of their eating, (as I did not weigh their food,) and the weight of their milk, I came to the conclusion that they would produce about the same quantity of milk.

Now if it is a fact that hay and green corn stalks produce about the same quantity of milk, the question naturally arises, on which can they be kept the cheapest? If farmers commence feeding on their English hay, immediately after it is cut, and feed on it mostly through the fall, it would make a heavy draft on their hay, and I think in many cases it would be exhausted, before pasturing time the next season. Corn can be easily cultivated and will produce abundantly, and I think may be fed on cheaper than hay.

Green second crop is very good to produce milk; but this it will not do to rely upon, for it can be produced only on land that is in a high state of cultivation, and on that to much extent, only in favorable seasons.

There is still another question which should be considered, which is, the kind of feed which has the best effect on the animal. If a certain kind of food will produce the same quantity of milk, and also tend, to some extent, to fatten the animal, it increases the value of that kind of food. Every thing considered, I know of nothing so good for food for milch cows in the latter part of summer and autumn as green corn stalks.

It is desirable, however, that further experiments may be tried, not only in summer and autumn, but winter feeding also—whether

roots are the most profitable, and if so, what kind; if meal, what kind and how used, whether in cut feed, or otherwise.

Another experiment has been tried by Mr. Daniel Merrill, 2d, of Methuen. The result, as he informed me, was in favor of the corn. The hay used was tolerably good, but not of superior quality.

I believe the prevailing opinion in our vicinity, among those that have cultivated corn the most extensively, is in accordance with my own, and as I have stated.

Another subjsct on which the Society has offered a liberal premium, is to ascertain the most suitable time for cutting hay. It would be rather difficult for a person to try an experiment which would be satisfactory to himself, much more to make a statement that would be satisfactory to others. There is so much difference in grass that it is difficult to make a rule that will apply in all cases.

Heavy grass should be cut earlier than light. I think that Herds grass that is a heavy burden, and coarse, if it is to be fed to horses, should be cut when it is full in the blossom; if it is designed for cattle, especially for milch cows, it should be cut somewhat earlier. If it stands until out of the blossom, and the seed nearly full, it is hard; it has not that sweet smell, and if the cattle could speak, I think they would say, it has not that sweet taste that it has when cut early. I think the hay will be as heavy if cut when full in the blossom, as when it stands leter.

If the grass is fine, with a mixture of red top or fine clover, it will do to stand a little longer.

Clover also, I think should be cut when it is full in the blossom, and if it is heavy and badly lodged, it should be cut earlier.

The quality of the hay, I think, depends much on the weather previous to cutting, as well as the weather in the haying season, and the manner of curing. A long season of wet weather immediately preceeding the cutting of the hay, injures its quality. Berries ripened in wet weather are not so sweet as when ripened in dry weather. Apples or peaches that grow in the shade are not of so good flavor as those that grow in the sun.

Grass cut when it is rather green, if a long season of wet weather precedes, may not be as good as grass cut some later, providing a considerable season of dry weather precedes cutting, and the difference may be owing to the weather and not to being cut later in the season.

I think it is not uncommon for farmers on this, as well as on many other subjects in regard to farming, to embrace erroneous opinions, attributing certain results to some other than the true cause.

JOSEPH HOW, Chairman.

Methuen, Nov. 19, 1849.

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## ON FRUIT TREES.

Many of our farmers have, in former years, realized large returns from fruit orchards; even a few trees sometimes producing more profit to the owners, than all the other products of their farms.

In later years fruit orchards have become more numerous, and probably the returns from them have not been so large as formerly, from the fact that the cultivation has been so much extended as to increase the supply to equal or nearly equal the demand.

Now, but very few of the products of the soil are more remunerative than that of fruit trees; and in proportion to the labor required, after fruit orchards have reached a bearing state, we do not recollect of any branch of agriculture that pays so well, as a well cultivated orchard.

Amongst us, there is now more uncertainty of producing fair fruit, than formerly. The reasons why are not in all cases obvious; and it may be well to offer inducements to careful, observing, intelligent fruit growers, to discover the causes and ascertain the remedies of imperfection in fruits.

Our attention has been called, this year, to the fact that apples, in considerable quantities have been transported from the interior of Maine, in some cases, from places many miles from railroad or water communication, to the City of Boston. These apples we understand have been taken at prices fully satisfactory to the grower, and an instance has been communicated to us in which the owner of an orchard has this year received more for his fruit, than he paid for the orchard a few years since.

Apple growers in more northern regions have the advantage of us at present, in the fairness of their fruit; this may not long continue; as with the extent of cultivation the difficulties are apt to increase.

If we can ascertain the remedies for the various causes of imperfection in our fruits, we shall probably find our climate and soil as well adapted to the raising of most of the staple fruits in perfection as any in this favored country; and interest will induce us to furnish not only a sufficiency for our own community, but largely for exportation.

The Committee were disappointed in not having opportunity officially to look over more of the orchards of Essex county; but one orchard, that of Daniel Adams of Newbury, being offered for examination.

This orchard the Committee examined on the 26th of September, and were much gratified with its appearance. The arrangement was good; the trees in a healthy and flourishing state, of vigorous growth and were creditable to the cultivator, whose statement gives in a somewhat particular manner his treatment of the orchard throughout.

The Committee recommend that the first premium on apple orchards be given to Daniel Adams.

JOSIAH LITTLE,
GEORGE W. GAGE,
GEORGE L. DAVIS,
GEORGE THURLOW,
MOSES FRENCH,
} Committee.

Salem, Nov. 19, 1849.

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DANIEL ADAMS'S STATEMENT.

*To the Committee on Fruit Trees:*

Gentlemen,—I offer for the Society's premium, my apple orchard, set out since 1845, and containing 204 trees, on about two acres. The land is a gravelly loam and somewhat rocky, a small part mixed with clay, and inclining to the northeast, and has been improved as a field for some 60 years or more.

The field, previous to the year 1845, had been in grass about five years. In the spring of that year I broke up one acre and manured in the hill with about six cords of common barnyard manure, and planted with corn, and obtained a fair crop.

In the spring of 1846, I spread upon the acre about eight cords of coarse manure from the barnyard and hog pen, and ploughed it very fine about the 10th of April, and immediately after set out seventy-six trees in rows, twenty feet apart each way, viz forty-two Baldwins, eleven Hubbardston Nonsuch, eleven Danvers Winter Sweet, and twelve Rhode Island Greenings; most of them two years from the bud, and then planted with corn, except a row of potatoes on a line with the trees. In '47 and '48 the piece was planted with potatoes, and the present year with corn.

In 1847, I broke up the other acre and set out 110 Baldwins, two years from the bud, and twenty-two feet distant each way, manured in the hill and planted with corn, except a row of potatoes by each row of trees, and in 1848 and 1849, with potatoes, about eight cords of common manure to the acre, spread and ploughed in.

The present year I have set out eighteen trees, Baldwins, which completes the lot.

Every tree set out both years, lived and grew well. Many of them made more wood the first year, than those of the same age left in the nursery. I have lost seven trees since they were set, viz: one by the oxen, four by the mice, one by the woodchucks, and one by the ice, which have been replaced by other trees.

The success which I have had in the living and growth of my trees, I attribute very much to the manner in which they were taken up and set out. Great care should be taken to keep every root as perfect as possible when taken from the nursery, and before setting out each tree should be turned up, and the end of every root of any size, be cut off with a sharp knife, at an angle of about forty-five degrees.

The land should be measured off and a stake put down at the distance you intend they shall stand; and which I think should not exceed twenty-five feet each way. The tree should be placed upon the ground and marked all round the roots, the hole dug just as deep as the tree stood in the nursery, (never I think to exceed one half inch deeper.) Then set the tree in its place, one man to hold it steady, one in the hole to place every root, the other with a shovel to pulverize the dirt and sift it in among the roots, while the one in the hole places with his fingers every root and little fibre, in their proper place; and so continue till the hole is full, and the setting is completed. Never tread the ground hard round the tree.

Setting forty to fifty trees is a good day's work for three men in easy land. I consider it all important that all trees should be set out right and with great care and be taken care of after they are set out. The land should be manured and cultivated for years, or at least until the trees come to a bearing state.

I have been somewhat minute in my statement, (perhaps too much so) hoping that others may be inclined to be a little more particular in setting out Fruit Trees, and in fact all trees, as I believe success mainly depends upon the manner in which they are set out.

Respectfully your ob't servant,

DANIEL ADAMS.

Newbury, Sept. 1849.

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## ON IMPROVED AGRICULTURAL IMPLEMENTS.

The Committee on Improved Agricultural Implements have paid all the attention in their power to that branch of the Show.

They consider it an object of high importance to afford the hand laborers an opportunity to compare side by side, the various tools indispensable to the successful cultivation of a farm. And this portion of the annual exhibition should be encouraged, to enable every farmer to compare and make such a selection as seems to him best suited to his particular wants.

In the hurried view and description of articles, the committee may have failed to notice some that were exhibited. They noticed, from the establishment of Parker & White of Boston, a great variety of farm tools of good construction and high finish.

Among them were, a Horse Rake, the common revolver with iron pointed teeth; also a roller attached, to keep the head of the rake raised from the ground. The roller has not been seen by the committee on any rake formerly exhibited.

Also, a Revolving Spring Tooth Rake, an article not long in use here.

8 Straw Cutters, of different sizes.

8 Ploughs.

1 dozen Concave Hoes, a superior article.

1 dozen Potatoe Diggers, a most useful implement.

Steel Spring Tined Manure Forks, with from four to ten tines.

Two and three tined Hay Forks.

Ox Yokes, of various sizes.

Crowell's Thermometer Churns.

Apple Parers, a convenient little article.

Case of small tools, for grafting, budding, and trimming trees, some of them lately brought into use.

Corn Sheller, said to shell 150 bushels per day, and worked by two men. Cost $8.

A double one, said to do double the work in the same time. Cost $12.

Grindstone Hangings, with friction rollers, and with plates each side of the stone to secure it to the crank, all of cast iron. Cost $2 25.

Flails, with iron caps and swivel, and the two parts of some of them attached by an iron link.

Bush Scythes and Snaiths; also Grain Cradles and Spoon, for digging post holes.

Long Tined Forks for loading corn, an article we believe exhibited for the first time.

From the warehouse of Ruggles, Nourse & Mason, of Boston, were exhibited nine Ploughs, a part of them with a cutter, called a horn, cast on the iron of the plough, to take the place of a cutter secured to the beam.

Concave Hoes.

An Iron Fork, with the start bent like a hoe, to be used in pulling manure from a cart;—a convenient implement in unloading long manure.

Hay Cutters, with straight knives, said to be an improvement on the former pattern.

Corn Shellers.

Hay and Manure Forks, of the various sizes and patterns.

David Ames, of Boscawen, N. H., presented a Plough, the main improvement of which over other patterns is, a wider plough-share, cutting a furrow about as wide as the plough is designed to turn; and a cutter secured to the plough, something like the old fashioned coulter. Apparently a strong plough, and well suited to hard and stony land; and we see no reason why it may not work well on any soil.

The committee regret they have had no time to make trial of it, and are therefore not prepared to recommend it, only for trial.

There was a Side Hill Plough, presented by William Chase, of Salem, which we consider also worthy of trial, as the committee are satisfied that the lengthening of the mould board will cause these ploughs to turn the furrows better. And the increased length of the mould board is the reason why the committee recommend it.

There were two Models of full size for Gates, which discovered some ingenuity. The only difference of any importance in them was, the materials and workmanship. Cost of one, $5; the other, $10. They were made in two parts of five rails each, so secured to posts at the outer ends that they turn up, and the ends of the gate, not secured to the posts, fall as the gates rise; and when fully raised, the passage way is clear. We consider it a model that might answer to secure any passage way, and a useful one where there are objections or obstructions in the way of the common spring gate, and preferable to a gate raised by a pully.

The committee are of opinion, considering the greater variety, and certainly of as good workmanship as any others, of the farm tools presented by Parker & White, that they are entitled to a gratuity of $6

They also recommend to be awarded,

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| To Ruggles, Nourse & Mason, a gratuity of | 3 00 |
| To David Ames, of Boscawen, N. H., do., | 2 00 |
| To William Chase, of Salem, do., | 1 00 |
| To Francis Burnham, of Manchester, for Vertical Gate Model, | 3 00 |
| To Samuel D. Tilton, of Salem, do do | 2 00 |

MOSES NEWELL, Chairman.

Salem, Sept. 27th 1849.

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## EXPERIMENT ON THE CULTIVATION OF POTATOES.

Salem, Nov. 19th, 1849.

Dear Sir,—Having devoted a large portion of my life to the pursuits of agriculture, allow me to make some remarks respecting the culture of Potatoes. Never having found any of the early kind of potatoes that yielded to my satisfaction, I was induced to try several

modes to find a remedy for the evil. My first experiment was reported to the Trustees of the Massachusetts Society for the Promotion of Agriculture, as follows :—

SALEM, Dec. 1st, 1820.

HON. JOSIAH QUINCY :

DEAR SIR,—Observing the produce of a few potatoes, which I transplanted last year, to be very good, I was induced this season to try the experiment upon a somewhat larger scale. About the first of April, I took some late white potatoes, after cutting them, placed them in a hot bed, as close as they would lay, and covered them with earth. On the 24th of April, the plants being in fine order, some of them twelve inches high, I took them up, and separating all the shoots but one from the parent potatoe, I made drills about three feet apart with a hoe, and filling the same with well digested manure, I transplanted as I should cabbage plants, the whole of the shoots about nine inches apart, in the drills. On the third of May, there was a very sharp frost, which injured the tops of the plants very considerably ; they in a few days recovered, and grew very rapidly, scarcely one of them failing. The rows were twice hoed. On the 30th of June I commenced using new potatoes, the size large and very fine, equal to any taken up in October ; finished digging them on the 10th of August : the land measured 90 by 52 links of the chain, on which stood one pear and one plum tree, and produced at the rate of 295 3-4 bushels per acre. The rows might have been much nearer, consequently the prodece would have been greater. I could not perceive any difference in the yielding of the plants, between those which were separated, and the ones which adhered to the potatoe. Should I try the experiment again, I should take all the plants from the potatoe and replant it, as it appeared as fresh and sound as the day it was first put into the ground.

E. HERSY DERBY.

My second experiment was reported to the same Trustees.

Account of four crops of potatoes raised in one season ;

April 10th, 1821. Planted half a bushel of late potatoes, part kidney and part round ones, cut into sets in a hot bed.

May 7. Transplanted first set of vines, as I should cabbages, and replanted the sets.

May 21st. Transplanted the second set of vines, and replanted the sets.

June 5th. Transplanted the third set of vines, and replanted the sets, and hoed the first and second sets of plants.

June 30th. Transplanted the fourth set of vines.

July 1st. Commenced digging full grown potatoes from the first set of vines, since which my family, (a large one) has been fully supplied, and I have lately commenced digging the fourth set of vines.

The potatoes exhibited were taken from the third and fourth set of vines, and there are very few small ones.

E. HERSEY DERBY.

Salem, Oct., 1821.

I could have extended the experiment much farther, and have no doubt I could have raised six different crops the same season, as the sets were still in fine order, when I left off the experiment. I once tried raising potatoes from the sprouts left in the cellar after the potatoes were removed in the spring; they were planted in a good soil in a single row, they vegetated very readily, but were very feeble the first part of the season, for want of nourishment from the parent set; the season proving favorable, in the autumn, I dug a tolerable crop of good sized potatoes.

The present season I took two potatoes, weighing together 3-4 of a pound, and cut them into twenty-seven pieces, each having an eye, and planted them in two flower pots in my green-house, the latter part of April, when they had grown to about eight inches in height, I turned them out of the pots, and planted them out in my garden, without the sets, in rows; this fall I dug from them very fine, large potatoes, without any small ones, weighing forty-six and a half pounds. Observing in the garden the last spring, several plants of potatoes that had lived in the ground through the winter, where I had raised potatoes the previous year, I was induced to take them up and transplant them. I was surprised to find on digging them this fall, a very fine produce of remarkably large potatoes. From these experiments I have satisfied myself that this is the best mode of raising early potatoes. You get none (or a very few) small ones this way. I have observed fully that the parent set is only wanted

to afford nourishment to the plant in its infancy; after it has formed roots it does much better without the parent set. In digging potatoes I have frequently observed that where we found the set not decayed, the yield was far inferior. I think it extracted nourishment from the plant rather than furnished any to it. I hope these experiments may prove of some use to the farmers of Essex.

I have the pleasure of subscribing myself,

Your sincere friend,

E. HERSEY DERBY.

To ALLEN W. DODGE, ESQ.

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## ON FARMS.

The Committee on the management of Farms make the following REPORT:

The Trustees of the Society have often expressed the opinion that the examination of a number of the best managed farms in different parts of the county, by their committees appointed from year to year for that purpose, having a full and minute account of the entire cultivation and management to accompany their report, would furnish to the members of the Society, through their annual pamphlet, a very valuable source of information.

To accomplish this desirable object, liberal sums have been offered in premiums, and the regulations accompanying the offers varied from time to time, to meet the wants and induce a larger number of competitors into the field. Notwithstanding which, few entries have ever been made, and many of the years not a solitary one, on which the committee could form a practical report. The present year, a new and apparently, a more liberal mode accompanied the offer.

The sum of $100 was placed at the disposal of the committee, to be awarded in sums not exceeding $25 each, provided a sufficient number of meritorious claims should be made. And while the committee would express their high gratification in the opportunity furnished them of examining, in the northern part of the county, a number of well managed farms, it must be accompanied with their regret that they were not favored with the priviledge of examining

other farms in different parts of the county, enabling them to compare the different modes of cultivation, and variety of crops cultivated, with the different success. The committee were directed to visit such farms as were entered for premium, and all others where the owners should signify a wish to receive a call from the committee, and a readiness to furnish a statement of their management.

Notwithstanding in the County of Essex, much of the enterprize is called to other pursuits than agriculture, there is a good market and a fertile soil, and much of it highly cultivated in all parts of the county. And at the present time, in the opinion of the committee, the owners and cultivators of the soil here have full encouragement to redouble their efforts in availing themselves of all the means of information within their reach, and prosecuting with renewed energy their honorable occupation.

It must be obvious to all, that a great physical change has been produced through the agency of steam as a motive power, within the the last half century. And the more recent discovery of rail roads, for the transportation of passengers, merchandize, produce, and live stock, which have already checkered our whole country, furnishing cheap and easy transportation to the cultivators of the soil many hundred miles in the interior, where the price of land and the expense of cultivation are comparatively small, may have, to some extent, for the few years past, injuriously affected the cultivators of the soil near our old markets, where the price of land is high, and expense of cultivation large. But it does not require prophetic vision to perceive that the cultivators of the soil here have passed this crisis, and are fast recovering their equilibrium, and will soon find themselves erect again, with their friends and neighbors in other pursuits. The partial failure of the potatoe crop for several years, and the fruit crop for the two past years, has affected the income of the farmers in this county to some extent. The other products of the farm have been abundant, and our domestic market has been rapidly increasing here, and extending into the interior. While the cultivators in the more fertile regions of the west, where crops are less uncertain and expenses small, are finding a foreign demand for much of their produce, prices of the products of the farm here are recovering to such an extent as to reward the laborer for his toil, and give him a small dividend on his capital. Nothing seems wanting to the cultivators of the soil of this county, to ensure success, but knoweldge, patience, per-

severance and economy, and the blessing of our Heavenly Father, who has graciously been pleased to vouchsafe to us the assurance that seed time and harvest shall not fail.

Jonathan Merrill entered his farm for a premium, but not in season, by the rules of the Society, to be entitled to one, should he have been found otherwise deserving. J. F. Ingalls, Daniel Merrill, and Simeon L. Wilson entered for an examination. All were in Methuen.

The committee proceeded in the discharge of their duties July 6th.

The farm of J. F. Ingalls is situated about two miles from Lawrence. He has had the management of it about six years, and, for that brief space, the committee were fully satisfied that the products had been greatly increased. His buildings were neat and convenient, and his cultivation clean and handsome. His young orchard appeared in a flourishing condition. He has reclaimed a number of acres of meadow near his buildings, with but small expense, which will reward him liberally. He keeps about twenty cows, the milk of which is sold at Lawrence. His whole management is worthy of imitation, and we award him the sum of $15 00

They next visited the farm of Jonathan Merrill, about one mile from Lawrence. He has but a small piece of land connected with his buildings. Some part is covered with fruit trees, and the rest occupied as a kitchen garden. The attention of the committee was particularly invited to his reclaimed meadow, about a mile from his house. He seems to have succeeded in bringing, by judicious draining, land which was but a short time since comparatively worthless, into a high state of cultivation. The committee saw growing upon it a luxuriant growth of grass, corn, potatoes, and almost every kind of garden vegetables. They award him the sum of $10 00

The farm of Daniel Merrill is about two miles from Lawrence. In the opinion of the committee, his farm is valuable for its situation, and a fine wood lot upon it, rather than for the natural fertility of the soil. There seems to have been much labor performed upon his farm, and with good success.

He has reclaimed some meadow by ditching and draining, and made the dry knolls fertile by hauling the mud upon them from the ditches. He has given much attention to making and preserving for use manure. We award him $10 00

Near the farm of Mr. Merrill, is the farm, or rather the nursery, of Simeon L. Wilson. It may be a question whether he should not have entered it with the committee on nurseries. His little cottage, however, surrounded as it is with trees, cannot fail to attract the notice of all lovers of rural taste and beauty, who chance to pass that way. There was much to be admired in the neatness and order of all his arrangements. His travelling establishment was not gorgeous or expensive. He was wheeled on a common wheelbarrow through the walks of his grounds, to show and explain to the committee the manner of reclaiming his land and cultivating his trees. Some of his standard trees had fruit upon them. Instead of a bush, which the quince usually exhibits, his quinces were trained to a handsome tree, having on them some fine specimens of fruit. His method of defending his plums from the ravages of the Curculio, was to the committee new, and seems to have been successful. But whether it could be practiced on a more extended scale, the committee say not. They are of opinion that, although for want of means in the commencement, the reclaiming of his land has been attended with much expense, yet, from present appearances, he will receive a rich pecuniary reward, when his trees shall be fit for market.

Mr. Wilson's statement is a history of himself, as well as his cultivation from his youth. The committee are of opinion that such persevering industry and successful management, in cultivating the soil under the many disadvantageous circumstances which have attended Mr. Wilson, being a cripple from his youth, should not pass without a favorable notice ; and they award him the sum of $10 00

The committee having visited and examined all the farms entered for examination, and being near the farm of Joseph How, of Methuen, who had received a number of premiums from the Society, for his good management and successful cultivation, embraced the opportunity afforded of passing over his farm. Having obtained the first premium of the Society for the best managed farm in the county, has not bounded his enterprize in farming. The chairman of this committee had visited and examined Mr. How's farm seven years since. Such alterations and improvements had been made in it since that time, as to change the whole appearance to such an extent that he was unable to find it without inquiry. A new and elegant house had been erected, ornamented with trees and flowers in front, and

with a hedge, or live fence, extending for a considerable distance on either side.

His homestead farm consists of 127 acres. Fifty-two acres of mowing, tillage and orcharding, the remainder pasture, with the exception of a few acres of wood land. He has two barns, one thirty by forty feet, used exclusively for storage of hay; and one eighty-four by forty, with a cellar under the whole, both of which he usually fills every year with English hay, of which he sells from forty to sixty tons per year. In his large barn is kept his stock, and in the cellar his swine, working over and mixing the manure. He has experimented to some extent with raw and cooked food, for fattening swine, and is of opinion that it may pay the cost for cooking roots, but will not for grain or meal. The produce of his orchard the present year, of great scarcity, was 120 barrels of winter fruit, picked from the trees. There is of field land a proportion well adapted to the growth of corn and grain, of which the committee saw fine crops growing. He has given more attention of late to the production of hay, which in his opinion gives him a better profit with less labor. Much of his field land is well adapted to grass; a proportion of it being reclaimed meadow, which does not admit, or require the plough, as it is kept highly productive by occasional top dressing. Other portions are moist, but admit of ploughing at dry seasons of the year, which he usually does once in about six years, as soon as the crop of hay is off. He then carts on about twenty loads of compost manure to the acre, harrows and rolls smoothly, and sows Timothy and Red Top seed, which never fail of a full crop the next season. He is in favor of sowing grass seed in autumn, rather than in the spring, with grain on dry land.

His pasture is on a high, smooth swell of land, where the committee had a fine opportunity of witnessing the good effects of gypsum as a fertilizer. Comparing his land where gypsum was applied, with other land adjoining, of apparent like quality, where gypsum had not been used, the difference was truly surprising. Although the season was dry, there was a luxuriant growth of white clover, covering the ground where gypsum had been used. His method of applying is, to sow early in the spring, from one and an half bushels to two bushels per acre every year. There were in this pasture about twenty head of beef cattle, the looks of which satisfied the committee that the feed was as nutritious as handsome. Mr. How composts most of his

manure, for which he uses for highland three parts meadow mud to one of manure, with leached ashes, gypsum, and sometimes a little salt. For moist land, subsoil is used instead of mud. He has experimented to some extent with guano, crushed bones, and poudrette. He is of opinion that any of these will benefit the first crop, but will shew but little or no effect afterwards, while his compost endures for a number of years, with but little apparent failure. In the application of manuro he, like others, finds much difficulty in arriving at certain conclusions, owing in part to the uncertainty of the seasons, whether wet or dry. For a corn or potatoe crop on dry land, he favors the ploughing in of the manure, as the surest manner of obtaining a full crop. But for grass and grain, which usually arrive at maturity before drowth pinches with severity, he prefers te have the manure near the surface. In the application of his compost to grass land, he is of opinion that it should be applied late in the autumn, to avoid the scorching rays of the sun before it is settled by the rains around the roots of the grass.

His cultivation is remarkably neat and clean. Scarcely a weed and not a bush, are to be found in his fields or pastures, neither in the open field or in ambush under the fences, which are mostly of stone wall. The surface stones had also been removed for fences and under drain, of which he has many.

Mr. How has been in possession of his farm for about twenty years. He is the third generation upon the same spot. His land as a whole, is naturally of good quality, and by his skilful management he has brought it to that state that it will continue to yield full crops with but little labor. In the haying field, we saw two lads at work, which, we were informed, are Mr. How's only children, apparently fifteen and seventeen years of age. From their intelligent look, animated and contented appearance, the committee were of opinion that Mr. How's farm might remain, as it now is, a model farm for the next generation.

Respectfully submitted, for the Committee,

DEAN ROBINSON, Chairman.

Salem, Nov. 19, 1849.

J. F. INGALL'S STATEMENT,

*To the Committee on Farms:*

GENTLEMEN,—My farm contains about 160 acres. Most of it was my father's. Six years since, I came in possession of it. I then kept one horse, four oxen, eight cows, and two or three young cattle.

I then cut but little more hay than was consumed by my stock; since, I have added to their number, so that I now keep two horses, four oxen, twenty cows, one bull, and one two year old heifer. This stock is supplied by the produce of the farm, (except a part of the meal and the shorts, which I purchase): the cows yielding milk I feed in part with roots, shorts, and meal.

The labor in summer is performed by myself, three men and a boy, one added during the haying, and by two hands in the winter. One goes to market once or twice a day, with milk and vegetables, through the year.

| | | | |
|---|---|---|---|
| This year I have planted— | 3 | acres | in corn, to ripen, |
| | 2 | do | in corn fodder, |
| | 2 1-4 | do | in potatoes, |
| | 2 | do | in vegetables, |
| | 9 1-4 | | |

My farm is divided into upland, mowing and tillage, about 38 acres; and of reclaimed meadow that has been mowed, 12 acres; also, three acres seeded down in August and September, the present year: 17 acres still remaining uncultivated. The upland I plough deep, and manure with compost, which I make chiefly from the droppings of the cattle, horses and hogs, including the urine, with peat muck. I have used stable manure and leached ashes, but do not consider stable manure profitable at $4 per cord, composed, as most of it is, of litter or straw in too great proportions.

About 90 acres is pasture, 16 acres of which being covered with wood. I have recently cut it off, and applied gypsum to two-thidrs of it, and find it profitable.

The past season I have pastured three of my cows off the farm.

My manner of reclaiming swamp or meadow land is as follows:—The first lot, containing about 7 acres. Mud from 2 to 8 feet deep; a cold, boggy swamp, partly covered with bushes, and the rest producing a little poor grass.

I first cut an outlet across the public road, and then ditched the lot, which was quite expensive; but the muck was a good compensation. My next process with a part of it was to cover it with sand, or sandy loam, which cost for one acre fourteen days labor of one man, and one yoke of oxen and cart. Most of this work was done in the spring, before the frost was out of the meadow; harrowing at different times, about two days.

Compost manure, about twelve cart loads, of forty bushels each was next applied, composed of three fourths sandy loam and one fourth manure, from the barn cellar, with leached ashes in an equal proportion. On this I sowed one half of a bushel of grass seed, in 1844. The remaining six acres did not require so much outlay as this, and therefore the above is more than an average outlay.

On some of it I had a good crop of grass at first without any oth- manure than leached ashes, spread on, about 150 bushels to an acre, and seeded in the spring of the year, with oats and grass seed. Most of this has given a crop of one and a half to two and a half tons of grass per acre.

I think much benefit is derived from harrowing in the Spring, when the frost is leaving such land. I removed some of the turf, but do not think it necessary or profitable. Nearly all the above meadow has yielded two crops each season for the two years past.

The second lot—a peat meadow, was partly covered with bushes, the other part producing but little grass. Mud from one to four feet deep. One acre reclaimed in 1847. A part of it I covered with sand, about fifteen bushels to the rod, the other part had no sand applied. It was then harrowed, while the frost was leaving the ground. It was then dressed with 120 bushels leached ashes, and sowed with oats and grass-seed and produced a good crop of oat-straw. It has since been dressed with compost manure, and I think has yielded two tons of hay per acre.

On the third lot which was partly covered with small water bushes, about 80 loads of sand were hauled, in the winter of 1847. Harrowed the next spring when the frost was coming out. In September carted on about 12 loads of compost manure, made nearly in the following manner: three fourths sandy loam; one fourth clear manure, (solid and liquid) from the barn cellar; then sowed down with about one half bushel of Herds grass seed. Its yield was not far from one and a half tons per acre.

The fourth lot. The mud of this lot was from one to four feet deep, covered with bushes. First it was burnt over; the remaining bushes were cut, the harrowed in the spring, before the frost was out, which killed most of the bushes. In September following, it was spread over with compost manure, and seeded down with grass-seed. Its yield was about 1500 weight per acre. If sand had been applied, as on the other lots, its yield would probably have been greater.

J. F. INGALLS.

Methuen, Oct. 30th, 1849.

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JONATHAN MERRILL'S STATEMENT.

*To the Committee on Farms:*

GENTLEMEN,—The farm examined by your committee, and which I offer for premium, contains forty acres, divided as follows: Fifteen acres unimproved, ten acres tillage, eleven acres mowing, and one acre orcharding. The ten acres of tillage are divided as follows: six acres to potatoes, three acres to corn, and one acre to gardening.

For the last three years, the potatoe crop has averaged from 175 to 200 bushels per acre. The corn crop, during the same time, about 65 bushels per acre. The hay crop also nearly two tons per acre.

The most important feature of this farm is, eighteen acres of improved meadow land, and to which the attention of your committee was particularly called. Improvements were first commenced on this land about eight years since, and have been made from year to year, till the present; and now eighteen acres are in a healthy and vigorous state of cultivation. This land was originally in a very rough state, covered with large hassocks, with a growth of bushes and wild grass. The land was first drained by ditching, the peat taken from the ditches meeting the expense. The hassocks, roots and bushes, were then removed, and the ground dug over with the hoe. Most of the upper part of this land, including hassocks, bushes, &c. was burnt for the benefit of the soil. The expense of this clearing and preparation has been thirty dollars per acre on the average. On some parts of this land there has been a slight growth of wood.

The use of the land for two years, and the wood, has been given for reclaiming the same, which has been a profitable operation to those engaging in it, and at a much less nominal cost for the improvement to myself. Much of the land has been improved in this manner.

The potatoe crops have been raised without gravelling, and usually without any manure for the first two seasons; subsequent seasons, by applying about one and a half cords to one of manure per acre, which I deem amply sufficient. The largest crop of potatoes raised was 350 bushels from one acre—eleven hills yielding a bushel on the average.

The corn crops have been raised after gravelling the land. From ten to twelve cords of manure per acre have been applied previous to planting. The cost of gravelling has averaged twenty-five dollars per acre. The largest crop of corn raised was in the year 1846, when one-half an acre by measure yielded 105 bushels of superior corn on the ear.

The grass crops have been raised on the land after being planted with corn, no dressing being applied for the first two years; subsequently, the grass has been kept up by merely a top dressing each season. This land is now mostly free from wild grass, and I consider it in as good or better state for the several crops than when first reclaimed.

In 1844, 3850 pounds of superior English hay were taken from one-half an acre by measure. The crops of hay from year to year, have averaged rising two tons per acre, and of the best quality. When the seasons have proved favorable, the first two years after being laid down to grass, about one ton of second crop has been cut on much of the land, per acre. The crops on the reclaimed land have been much larger, and of as good quality as the same crops on other parts of the farm, although much of the land is in a high state of cultivation. I deem it best to remove the roots from meadow land when first reclaimed, it as facilitates after cultivation. Vegetables have also been raised on this land, with the best success.

Upon other parts of my farm, I have 260 young and thrifty apple trees, grafted with choice fruit. Yield last year, forty barrels. I have also 100 young peach trees, and 100 plum and cherry trees. I also raise yearly large quantity of beets, parsnips, cabbages and other vegetables, both for home use and the market.

I deem my reclaimed land the most important and profitable part

of my farm; consequently I have devoted much attention to its cultivation, and for this reason have given it so much space in this statement.

JONATHAN MERRILL.

Methuen, October, 1849.

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DANIEL MERRILL'S STATEMENT

*To the Committee on Farms:*

GENTLEMEN,—My farm consists of about 125 acres. Not far from 75 acres of it are covered with wood, mostly of a young growth. About 29 acres of the other are pasturing, and the remaining 21 acres are mowing and tillage. There is quite a variety of soil on the farm, from the poor gravelly knoll to that of meadow land. Quite a proportion of the upland has a gravelly subsoil.

At the time I commenced on the farm, (which was about fourteen years ago,) there were probably from six to eight tons of English hay cut on the farm. At the present time, from eighteen to twenty tons. The meadow, which consists of about four acres, I commenced improving in various ways. On certain parts of it, I took the turf off, and then gravelled and seeded down to grass, and so far as I had the means, top dressed it. Other parts were gravelled without topping. In doing which I put just enough gravel upon it to kill the grass. Other parts were ploughed and planted to corn or potatoes, and after being well subdued, was laid down to grass.

You may wish to know which method I consider preferable. I think if the meadow be smooth and pretty free from moss, it may be as well to cover without topping. But if otherwise, the topping system I think is preferable, especially if it does not take too deep. Ploughing should be resorted to when other crops than grass are desired, or when it is necessary to level without lowering the surface. I usually put on my meadow a light top dressing each season, generally late in the autumn. As near as I can judge, I cut from two to three tons of hay to the acre at the first and second time of mowing.

As I sell my milk, my object is to raise such crops as will increase its quantity. Grass and roots, with green corn, are my principal crops, with the exception of apples. To the raising of apples I have

given considerable attention. Most of my trees that bore natural fruit, have been grafted, however large they were. By grafting, pruning, scraping and manuring, my orchard has been much increased in value.

I am very much in favor of deep ploughing and manuring highly, even if by so doing we are obliged to cultivate much less land. The little experience I have had in farming, convinces me that most farmers pay quite too little attention to the *making* of manure.

I had no cellar to my barn until about one year ago; since which time I think my manure heap has been very much increased, especially in value. In making manure, (which has been almost entirely compost,) muck has been used very freely, and I think to great advantage. I have purchased but little manure, with the exception of leached ashes, for some years. Since I have had a cellar under my barn, my fresh manure has been made into compost *daily*, (Sundays excepted,) and so managed that most of it becomes saturated with urine. In laying down my land to grass, it has been done mostly, for a few years, late in the autumn, so that the seed did not vegetate till the next Spring. I have had very good success in this way of managing.

DANIEL MERRILL, 2d.

Methuen, Oct., 1849.

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SIMEON L. WILSON'S STATEMENT.

*To the Committee on Farms:*

Gentlemen,—Having been favored with a visit from the Committee on Farms, and requested by them to make a statement of facts relating to my place, it is with pleasure I comply with their request. I suppose their attention was attracted to it by the peculiar circumstances under which I have labored, in bringing a barren piece of land to its present fertility. I will briefly state the particulars. At the age of thirteen years I became a cripple, by a white swelling on my knee, which caused me to lose the use of that joint. I at first got about upon crutches; afterwards with only a cane, and finally without the aid of either. And whilst I was buoyed up with the hope of again getting well of my lameness, or nearly so, I was afflicted with

a paralytic stroke, which caused me to lose the use of the other leg very suddenly. This took place in 1831, when at the age of 22 years; since that time I have not been able to walk one step. At first this affliction seemed to dishearten me, and I came near giving up in dismay. But hope predominated, and I made a vigorous effort to obtain a livelihood by my own industry. Not having any trade, I commenced closing shoes. By applying myself very closely to my business, working early and late, I succeeded in obtaining a sufficient sum of money to purchase one acre and sixty rods of land, near Methuen village. With a little assistance I soon had a house on the same, into which my parents moved in the fall of 1836. This piece of land, although but small, has a variety of soil, viz: a gravelly hill, yellow loam, black loam, or clay soil, rather moist, and a swamp very wet, with muck eighteen inches deep on an average, with a clay and sandy bottom. The swamp was covered with a thick growth of alders. The upland appeared to be almost filled, or paved, with small stones. The whole lot was a very bad looking piece of land. In the spring of 1839, the stones were picked off the upland, and it was ploughed for the first time, which threw up as many more small stones as had already been picked off. The alders were cut from the swamp, and a ditch dug through the same to drain it. I then undertook to plough the wet or swamp land with six oxen; but they did little more than merely to tear it up in spots, there being so many roots. It was so bad I concluded not to cultivate it.

At this time I built a shop adjoining my house, from which I could see to any part of my little farm, and give directions about the work without leaving the shop. Having but limited means, and not being able to do much on the land myself, I made but slow progress in improvements. I commenced a ditch six feet from the ploughed or upland, and run it around the swamp on three sides, six feet wide and eighteen inches deep, and threw the muck upon the space between the ditch and upland, which gave me six feet more in width to my upland around the meadow. This looked well, and I was not content to stop here. According to the Yankee motto, thinking it best to keep moving, the following year I filled the ditch with stones at the bottom, then gravel, then loam, until it was filled even with the surface of the swamp. Then I cut another ditch around the swamp, directly beside the one that I had filled up, and threw the mud on the same, which added six feet more, or twelve feet in all,

to the upland on three sides of the swamp. I again filled the ditch as before, and threw the muck from another on top. I pursued this course until the whole swamp was reclaimed, which raised the surface eighteen inches higher than it was before. I then removed more than half of the muck to the upland, and returned as much loam from the upland in its place. Then by ploughing, the loam and muck were well mixed. I have an open drain leading through the meadow, from the spring by the hill, to a drain by the road; thus the meadow is rendered dry enough for any kind of cultivation.

This method could not be practised as a general rule, with regard to economy, in reclaiming wet land. I had good reasons (or thought I had) for reclaiming my own in this way. In the first place, it was but a small piece, near the house, and a convenient place for a garden. I also wished to remove the gravel and loam from the side of the hill to put in a bank wall, and make room for a row of cherry trees. I wished to make it myself, and add to the beauty of the scenery about the garden. Having but limited means, and keeping within those limits, I made but very slow progress, and was three or four years reclaiming my meadow. The stone, gravel, &c., was wheeled on a wheelbarrow from five to fifteen rods. The cost of reclaiming the meadow in this way was about $3 to the square rod, or $480 to the acre. But I must charge the upland with half of that amount; for every load used to raise the meadow was taken out of the way from the upland. It would thus leave the expense of the meadow at the rate of $240 per acre.

In the year 1841, I received a few fruit trees of choice kinds, from a nursery near Boston, which was the commencement of my setting fruit trees; and from this date I made it my practice to set a few trees each year, of the best varieties. I would here mention, that wishing to avail myself as much as possible of useful information in regard to farming, gardening, and the management of fruit trees, I became a subscriber to the Boston Cultivator, at its commencement, in 1840. Since that time I credit its editors and numerous correspondents with much valuable information. The more I studied into the art of gardening and growing fruit trees, the more lively interest I took in the same—not more for the profit than by the beauty of the scenery, to make home the more sweet. In 1843, I transplanted to a row by themselves, a few small apple trees, that had come up spontaneously about my place; and the following year

I pursued the same course, at which time the row numbered about one hundred thrifty trees. In 1845, the largest of these I had grafted, and at the present time one of these trees has fruit on it, being only six years from seed, and four from graft.

In 1846, I concluded to commence a small nursery of fruit trees. Having previous to this obtained Downing's work on Fruit and Fruit trees, and also Thomas's and Kenrick's upon the same subject, I had studied their manner of treating fruit trees, both in the nursery and as standards, and could fancy much pleasure in the same. At this time I sowed seed of various kinds, and bought a few seedlings suitable to bud the succeeding summer. My meadow being now about completed and made dry, it gave me more room to extend my nursery. In the spring of 1847, I grafted a few apple trees on the root with good success, and the following July commenced budding for the first time. At the present time I have my land so completely covered with trees, that I am forced to convey the dressing to it in a wheelbarrow.

Although I can do but little in the nursery myself, I usually go into it every day, (upon the wheelbarrow) and see what is in the most need of being done, and lay out the work for the day. Sometimes I work there myself by getting upon my hands and knees between two rows of trees, and trim or weed them as I creep along. Sometimes I bud a few trees myself, but it being rather inconvenient for me to do this work,—I consider it better to work in the shop and hire the budding done. It requires nearly all the work of one man now to attend to the nursery. The number of trees on the place at the present time is as follows:

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|---|---|
| Apple, | 6787 |
| Plum, | 388 |
| Cherry, | 814 |
| Pear, | 2947 |
| Peaches, Apricots and Nectarines, | 640 |
| Quince, | 377 |
| Whole number, including all varieties and sizes, | 11,993 |

Together with a great variety of Grape Vines, Strawberry Plants, Gooseberry and Currant Bushes. The whole quantity of land cultivated is about one acre. There being about one third of an acre

used for yard, buildings, &c. I raise between the rows of trees the various kinds of vegetables needful for family use.

One row of apple trees, 125 feet in length, and containing 400 trees, budded September last, now stand five and a half feet high, of the present year's growth. But to be more sure of a good growth another year I intend to transplant some of them. My apple trees have borne but little fruit yet, which I account for by the rapid growth they are making. My stone fruit trees would yield me large crops, were it not for the Curculio. I have tried many experiments to no avail, and some with more success. I have applied salt to plum trees since I first commenced growing thnm, using from one to two quarts to each tree, according to its size, spreading it in March or April under the branches of each tree as far as they extend. Although there is no perceptible diminution in the ravages of the Curculio on trees thus treated, yet I use salt annually, as I perceive it to be of great benefit as a fertilizer. I practice washing my trees annually with potash or strong soap-suds, and throwing dry ashes on to the trees when the dew is on them, in the morning, and am not much troubled with insects, except the Curculio, and sometimes the borer. The borer is only destroyed with knife and wire, by watching the trees.

I will here mention a successful experiment for the protection of the plum against the curculio. Last year I made two bags of old thin muslin and drew them over two limbs, about the time the fruit set. Within each of these bags I saved a few beautiful plums, and not a plum did I save on any other part of the tree. Taking courage at this good success, I bought last spring a few yards of bonnet lining which I made into bags according to the size of the limbs I wished to cover. These I drew on the limbs of several trees, some when the plums had set, and others when they were in the blow; for I found the enemy had made their appearance while the trees were in bloom. Under each of these bags I saved plums, apricots and nectarines, upon limbs of twelve different trees; and these were the only ones I saved this year. The first of August I removed the bags, the curculio having disappeared. Some may think this would be too expensive, but I think not. The muslin would last many years; and by training the trees, or the branches in the right form, they might easily be covered, to the profit of the fruit grower. Be this as it may, I have found it of great use to me, as I had

bought a variety of choice plum trees, from which I did not like to use buds and grafts, until I had proved the fruit. This I have accomplished. One small branch, covered by a bag measuring six and a half by nine inches, contained twenty-one beautiful plums, hanging in one solid cluster, causing the little limb to bend so much beneath its weight, as to require a prop to support it. Upon another tree (the Moorpuck apricot) I saved eight apricots, under a very small bag. I am training some apricots and other trees in the form of a fan, to make them the more convenient to be covered with the muslin.

I would here mention that I have this summer been using refuse tobacco with good success in driving away the insects. On throwing the dust, or snuff, into the tree, we can see the rose bugs and other insects leave the tree immediately. I also use it around the roots of peach trees for the borer. Until within two or three years, the only manure used by me has been the compost made in the summer, as follows: weeds, potatoe tops, pea and bean vines, or any other vegetable matter, mixed with sand and loam in alternate layers, when for low land; and with muck, when for upland. This heap would receive the scrapings of the yard, road-side, and also the washings from the house daily, together with some salt and ashes; this, with the manure from the pen of one hog mixed with it, has been all the manure I have used until 1846. Then I bought a cow, and in 1847 a horse; of these, about half of the manure has been used on other lands.

Although I have been many years doing what capital could have done in much less time, yet I have the satisfaction of building up my little place by my own industry; laboring under very unfavorable circumstances, without capital, and without the use of my legs. But now I am in a forest of fruit trees, planted by my own direction; and the soil drawn upon the roots by own hands, as I sat upon the barrow or box. I can now view the works of the Almighty in the growth of these trees, and the production of their fruit.

SIMEON L. WILSON.

Methuen, Sept. 3d, 1849.

## ROOT CROPS.

The Committee would probably be considered as having discharged their duty, when they have reported the statements of the claimants for premiums and the adjudications upon them. Those claims, however, having been so few, (one only) and the subject being so important to the farmer, the Committee are willing to transcend the limits of strict rules, and introduce such remarks as they hope may be useful. The chairman alone, however, is responsible for the remarks that follow, and hopes to be excused for sometimes speaking in the first person, instead of putting forth the whole as the act of the Committee.

It is proposed to speak of a few of the most important Roots, and commence with *Mangel Wurtzel*, sometimes called Root of Scarcity, sometimes Field Beet, and in Germany, always Mangel Wurtzel.

This root was cultivated considerably for stock some years ago, but I am not aware that it receives much attention at this time. It is a more exhausting crop than the turnip or onion; but it contains double the nutritive matter of the turnip, and will consequently warrant double the manure.

Mangel Wurtzel, according to the analysis of Mr. Harepath, of Bristol, Eng., contains 136 parts of nutritive matter, (sugar and starch) as often as the Swedish turnip gives 64, and as often as the white turnip gives 42. The Swedish turnip has innumerable enemies, but it is not known that the Wurtzel has any. When sown alongside of the turnip, the latter is often found ruined with insects, while nothing whatever has troubled the former. The Wurtzel also keeps better. They often cut perfectly good in July, and even in August. They will not, like the onion, bear to be continued many years on the same spot, but require a new one every few years; this, at least, has been my experience. Perhaps more manure would have answered every purpose.

*Manner of sowing.* The ground must be ridged with a small plough, and great care should be taken that the seed is not sowed too deep. The seed sower also fails in depositing seed that has been prepared as this ought to be, by steeping it at least twenty-four hours. A writer in the Farmers' Encyclopædia recommends using an iron wheel. But a cheap wooden one, such as every one can make, will answer the purpose. Upon the outer circumference of

the wheel, there should be either iron or hard wood points, eighteen inches apart, about two and a half inches long, and tapering from the base to the point. This is to be wheeled along upon the top of the ridge, and thus holes will be formed, will remain open, and will be of uniform depth. Then follow and drop the seed by hand, and it may be covered at the same time, by drawing the foot at right angles with the ridge. Follow with a hand roller, row by row, or a light horse roller, pressing several rows at a time. The trouble consists in having two or more plants grow from the same seed. Every capsule contains several seeds, and thinning must be attended to while the plant is very small.

Wurtzel may be raised upon a stiffer soil than the turnip, but as it grows much out of ground, it will not bear the cold so well. The tops, though not so abundant, are a rich food for milch cows, and impart no taste to the milk or beef.

In harvesting the Mangel Wurtzel, care should be taken not to wound the roots. There is something in the old idea that they will bleed if cut. The fibrous roots had better be left on, and some of the top too, than wound the beet by trimming too close. Care should be taken in feeding out to the cattle, as by using too many, especially in the first part of winter, they are apt to scour.

It is said by a French writer, the Abbe Rosier, that the leaves of the Mangel Wurtzel may be taken off every fifteen days after about the first of July, and fed to the cattle. There can be no question but milch cows would do well on them, but it is subversive of all our ideas of vegetable physiology, that the root should grow without the leaves. The root must stop and wait for the leaf, because that alone forms the communication with the oxygen of the atmosphere. Leaves are the lungs; and the experiment of taking them off once in fifteen days, must be a dangerous one.

When milch cows are fed *chiefly* upon this root, they give more milk, and a richer and thicker cream for about a fortnight, after which they grow too fat, and the milk lessens. Hogs do about as well on the *raw beet* as they will on *boiled potatoes*.

As to the quantity to be given, it is said that thirty-six pounds of these roots and eight pounds of English hay a day, given at two feedings, half at each time, will make a cow give as much milk as in the flow of summer feed.

An experiment of great value to root growers was made some years ago, showing the comparative feeding properties of Mangel Wurtzel and Swedish Turnips, which may be introduced with propriety here. The experiment was made by Lord Spenser. He took two steers, weighing 668 pounds each, and of the same age, wanting some six weeks. On the 24th of December he put No. 1 to Swedish Turnips, and No. 2 to Mangel Wurtzel. On the 23d of January following, No. 1 had consumed 1624 pounds of the turnip, and had increased in weight thirty-five pounds, or at the rate of forty-eight and a quarter pounds for every ton. No. 2 had consumed 1848 pounds of Wurtzel, and had increased fifty-three pounds, or at the rate of sixty-five and a half pounds for every ton. The trial was now varied. No. 1 was put to Mangel Wurtzel, and No. 2 to Swedish Turnips. On the 20th of February, No. 1 had consumed 1884 pounds of Wurtzel, and gained this month thirty one pounds, or at the rate of thirty-six and three quarter pounds for a ton. No. 2 consumed 1880 pounds of the Turnip, and gained thirteen pounds, or at the rate of fifteen and a half pounds for every ton. Further experiments were made upon the same animals. It seems thus far clear, that the balance was in favor of Mangel Wurtzel, and no trial made disproved the fact.

*Sugar Beet.* It has been stated in the newspapers recently, that a French chemist had discovered a method of procuring something like three times as much sugar as formerly from this beet. In our country, however, it is not probable that the cultivation of the cane will be relinquished for sugar beet. They are valuable in stock, nevertheless, and if all farmers should succeed as Mr Fuller did at Nahant, in 1840, it is a question whether any crop would be better worth cultivating. He raised at the rate of 1300 bushels, of fifty-six pounds weight, on one acre, which is nearly thirty-six and a half tons. These beets are often packed in barrels and shipped to the South. A common price is $1,50 per barrel.

They may be planted on ridges four feet apart, in double rows, and the intermediate spaces may be sowed with turnips. It is a very good way, however, to put them in single rows, twenty-seven inches apart. Like the Wurtzel, they are a more exhausting crop than any kind of turnip—but unlike every kind of turnip, are always free from destructive insects. The land should be mellow, ploughed deep, and manured well, both fall and spring, though this is not indispensible.

*Onions.* It is unnecessary, since the Essay on this subject by the President of the Society, to say much upon the Onion. Unlike almost every other root, it does best by being continued on the same ground. A gentleman writing in the (old) New England Farmer, says he is now raising a fine crop of onions on a piece of land where they have been sown for *eighty successive years*, as nearly as he can determine. This fact is an important one, because, when the ground is once clear of weeds, it is much easier to keep it so than to clear a new piece.

Many a piece of ground has been abandoned for onion raising, just because they did not seem to do well on the first trial. But it has been quaintly remarked by observing farmers, that almost any rich land will bear onions after it *gets used to them*, and there is a good deal in it.

*Turnips. Inducements to cultivate them.* No such malady as has prevailed among potatoes, has ever yet assailed the turnip. It is, indeed, subject to insect ravages, but these are open and palpable, and can be detected so early in the season, that means may be taken for ridding the plant of them; and if ineffectual, the crop may be ploughed in, and something else done with the land the same year. But the *labor* of growing an acre of turnips is less than one of potatoes or of corn, while the produce is double. I went on to an half acre of land which had been ploughed, with one hand with me, on the 26th of last May. With the horse, and cultivator spread wide, and one tooth only on each side, we furrowed the land, sowed the seed by hand, and covered it with a common hay rake, using sometimes the teeth and sometimes the head, in little more than half a day. To have planted with potatoes must have taken longer. With a seed-sower it could have been done quicker, and probably better. I have stated the fact, however, so that none may be deterred from raising root crops on account of the labor. As to the subsequent labor, the ploughing between the rows is the same as among potatoes, of course—thinning and transplanting are extra, it is true, but if very thick you obtain some fodder, or if the plants be left on the ground, some manure. The hoeing is about the same as hoeing other crops,—and in harvesting, by help of the plough run along side of the rows, it is obvious that the same quantity could be gathered, in far less time. I have referred to the French turnip in the above remarks,—a name, however, which has almost

entirely disappeared from the books and agricultural papers, *Swedish* turnips being almost the only thing of the kind now talked of.

*They suffer less from frost.* Turnips can be left safely in the ground till all other crops are gathered in. The ground may freeze quite hard without serious injury to the crop; and then they may be kept in a cellar entirely too cold for any other roots.

They will keep *late* in the spring, if kept cold. The English turnip grows *corky*, but the French and Swedish do not.

*Swine will grow and fatten on them.* Judge Buel said that his neighbor Bement, of Albany, kept twenty hogs, mostly full grown breeders, from the 1st of November to the 15th of February, in the winter of 1838 and '39, upon ruta baga and buckwheat bran, giving them six bushels of roots and one of bran each day, at three feedings—two of the feedings being on raw roots, and one on boiled. "When he began to feed with the roots, the hogs were low in flesh; at the termination of the three and a half months, they were too thrifty for breeding, and some of them fit for the butcher. The owner estimated that four quarts of corn to each hog per day, for all that time, would not have brought them into a better condition than did the turnips and bran." The corn, at seventy cents per bushel, would be worth one dollar and seventy-five cents per day. The six bushels of roots, at twenty-five cents per bushel, would be worth but one dollar and fifty cents. The bushel of bran would cost but a trifle, of course. But suppose the expense were equal. An acre of turnips does but moderately well when it produces 600 bushels to the acre;—this would be equal to 100 bushels of corn, which is an amount that few fields in Massachusetts ever produce.

*Neat Cattle do well on turnips.* Gov. Hill tried it in the winter of 1839. He gave his oxen turnips once a day, cutting them with his own hands; and he says that with the aid of the coarsest interval hay, they worked nearly every week-day, and continued to thrive;—and cows fed with the same, and corn butts and oat straw, yielded milk abundantly—much more, says he, than if fed on the best hay. The objection that the milk tastes of the turnip is not well founded; it will taste if cows eat the *tops;* and so will the beef of the animal that feeds on tops;—but the most abundant feeding of the root itself communicates no disagreeable flavor, but contributes to the flesh of the one and the milk of the other.

Neat cattle and sheep have trebled in England since the culture of the turnip crop commenced, about fifty years ago. And the increase is attributed by writers on the subject almost wholly, if not entirely, to the turnip culture. "English agriculture has been revolutionized by it." Mr. Webster saw these fields of turnips, of three, four and five hundred acres.

The great extent of the turnip culture in Scotland, is evidence that such crops cannot be unsuited to Massachusetts, as the climate there resembles ours more than the English does.

*Objections considered.* "Few barns," it is said, "have a suitable cellar, and the labor of storing a large crop of turnips in the house cellar, and of carrying them to the barn as they are wanted, is an insuperable difficulty." The labor would not be trifling, but how many tons of English hay, that could be spared in consequence for the market, would it require, to hire a boy to do all the carrying?

"*Insects attack every kind of turnip,*" it is further said. This objection is a great one, it is admitted. The half acre of turnips of which mention was made above, were green as the sea on the 1st of July last, and about the 15th there were some half dozen spots where the turnip louse was commencing. By the 1st of August, every leaf was covered, and remained so a little more than two months, when they yielded to a cold storm and disappeared rapidly. They staid too long, however, for the crop. It was estimated in June that there would be five hundred bushels upon the half acre—there cannot now be one hundred bushels.

But this may not occur again in ten years. Besides, some very simple remedy may be yet discovered. When the Government of Sweden called the attention of Linnaeus to the fact, that all the ship timber in the dock was worm eaten, he discovered the cause to be a little fly, and so simple a thing as laying the timber under water for the few days, during which the fly laid its eggs, prevented the difficulty entirely. Some other Linnaeus may find, that though he cannot lay a turnip lot under water, there may be a kind of water which can be sprinkled upon the turnip, destructive to the louse, and yet safe for the plant. I would recommend an experiment, beginning with soap suds, adding dissolved potash gradually, going from medium strength to one that would color the leaf. Animal life would feel it before vegetable. Something short of the death of the plant would kill the louse, there can be no doubt. Much observation would

be necessary to determine what strength of alkali would be required, but as the turnip Aphides is so perceptible to the eye, any one can ascertain when it is sufficient to overcome the insect. It will be a triumph worth achieving to overcome this pest, so contemptible for its size, yet so mighty for its numbers. Like the army worm, nothing vegetable can stand before it; twenty generations—sometimes in a single summer, so that "the son may finish what his short lived sire begun."

With respect to using potash upon the turnip, though as before stated, a strength that would spare the leaf, might destroy the insects; yet even if the leaf were killed and cut off with the scissors, it would be a smaller evil than to allow the ravages to go on, because though the leaf should be killed with the alkali, a new one would grow long before the louse would otherwise leave it. The insect began to disappear in the case referred to, before the middle of October, and new leaves in many cases began to grow; but it is obvious that the leaf would have grown long before that time, had it been cut off by the first of August.

*Manure.*—Any manure almost will answer for the French or Swedish turnip. Upon the half acre referred to, which is an island in Essex river, called Dilley Island, I spread rockweed and other sea stuff, such as is washed up by the tide. This was the only kind of manure that had for previous years been used. Probably the plants derived their support from the rotten manure of the last year.

*Quantity of Seed.*—One pound of good is sufficient for an acre. This will cost at the seed store about seventy-five cents.

*Preparation of the ground.* If the soil has dog grass in it, the rows should be made across the furrows—that is, should run across the furrows made in ploughing the field, and these rows should be made, not with cultivator teeth, but with a pair of oxen or horses, and a plough large enough to go through the dog grass turf, and then mellow soil hoed in to fill these cross furrows, so that the plants may have a *free soil* to work in. And one excellent effect of a French turnip crop upon dog grass is, to shade, and smother, and extirpate that foul weed.

Since the potatoe has been suffering from the inscrutable disease which has prevailed so fearfully, French turnips have come in as a tolerable substitute for the table. A farmer in Essex, who raised them among his corn, sold them at fifty cents per bushel, for cash, at Gloucester market.

The cultivation of Root Crops is receiving increasing attention, and in some departments of it the products bid fair to exceed in value almost every other product of the garden or field. Three hundred acres of the best land in Danvers are devoted to the onion. It is painful to learn, as we do from Mr. Proctor's letter, appended to this report, that there has this year been a comparative failure. Had an average crop been obtained, of 400 bushels to the acre, the yield in that town would have been 120,000 bushels. The Indian Corn crop, in Danvers, a few years since, was valued by the town Assessors at $8,357 only; while the onions, this year, at fifty cents a bushel, with the success which has generally attended, would have been worth $60,000. This is nearly twice the value of all the English and other hay raised in the same town in the year 1844.

It will be seen by the letter referred to, that, owing to the heat or some other cause, the onion *louse* has this year made its appearance. This is greatly to be regretted. No conceivable drought or heat is so much to be dreaded, as an army of insects. The destruction of the tribes that occasionally assail our crops, is a subject of sufficient importance to call forth the united energies of the Agricultural Societies throughout the world. Let premiums of sufficient value be offered to naturalists at home and abroad, to induce them to turn their attention to this subject. It is no place here for more than a hint. But the N. E. Farmer of 27th Oct. informs us that on a farm in Michigan, near Fort Huron, during the past summer, the army worm, so called, has "marched through field after field, in solid phalanx, devouring everything in their way. Where a crop of 5000 bushels of oats was expected, there will not be a single bushel. One tenant was driven from his house, and the owner, on the opposite side of Black river, was able to keep possession of his dwelling only by attacking them on the bridge and sweeping them into the river." And the destruction of whole fields of turnips by the louse in the county of Essex, is a sufficient admonition to prepare for such an insect invasion as certainly seems to threaten a famine of some of our indispensable crops. The undersigned would respectfully but earnestly suggest the importance of printing Dr. Harris's treatise upon insects, in the present number of the transactions.

One crop only has been entered with the Committee for premium. This is by Francis Dodge, of Danvers. The crop is one of Carrots,

at the rate of twenty-eight and three quarter tons per acre. His statement is found below, and the Committee think that Mr. Dodge is entitled to the Society's premium of six dollars, and recommend that it be awarded to him.

DAVID CHOATE, Chairman.

Essex, Nov. 17th, 1849.

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The annexed letter from the President of our Society is inserted, as containing facts worthy of being registered:

DANVERS, Oct. 30, 1849.

MY DEAR SIR,—I am pleased to learn that you will prepare a Report on the cultivation of Roots, notwithstanding our cultivators have failed to forward statements of their crops the present season. It sesms to me quite as important to take notice of the failure of crops, and to trace the causes thereof, as their success. I will state, briefly, such facts as have come to my knowledge, from intercourse with the cultivators of this neighborhood, to be used at your discretion.

1st. As to the *Onion crop*. In this there has been a failure. Not more than half the usual quantity raised to the acre, upon an average. The cause of this failure is thought to have been, not so much the *drought*, as the *extreme warmth*, in the early part of the season. Shortly after the warm days referred to, the onions began to falter, and in many places became lousy, or covered with a small light-colored insect, that stints and impedes the growth of the plant; some fields were entirely destroyed in this way. This happened quite as extensively among the most careful cultivators as others. More on ground long appropriated to the onions, than new land. Some fields suffered from the *drought*, where the ploughing had been shallow for several successive years;—but generally the failure in the crop is supposed to have been occasioned by the cause first mentioned. Very few have obtained more than *three hundred bushels* to the acre, where they expected *four or five hundred;* generally the crop has been less than *two hundred bushels* to the acre. Taking into view that three hundred acres, at least, of our best lands, the present season, were appropriated to the growing of the

onion, the town has been taxed more heavily, in the *loss on this crop*, than in any other manner.

2d. As to the *Carrot Crop*. It is good—never better. Many fields yield twenty tons and upwards to the acre. This plant is extensively cultivated. Corrots readily sell per ton at more than half the price of English hay. They are thought to be a sure and valuable crop. They will not do well for several years in succession, on the same land. Notwithstanding the drought was very severe in August and September, it affected this crop very little. I have heretofore remarked upon the benefits accruing to the land from the cultivation of the carrot, and have attributed it to the deep stirring incident thereto.

3d. As to the *Beet Crop*. Some farmers have raised a very good crop of the *turnip beet*, and esteem it a valuable product;—but generally the beet is not much cultivated; not so much, I think, as it ought to be. I have seen a few patches of the sugar beet, of limited dimensions, very well grown.

4th. As to the *Potato Crop*. Potatoes are very fair in appearance and abundant in quantity—but of doubtful character. Some farmers have lost more than half their crop, within a few weeks after they put them into their cellars. Others are so doubtful as to the character of the potatoes, notwithstanding their entire fair appearance, that they are unwilling to take them to market, through fear that they will prove valueless. As near as I can learn, one half of the expected crop of potatoes in this town, the present season, will be lost. The man who shall trace the true cause of this blight, and prescribe an adequate remedy, will render the community a service of more value, than has ever been rendered by the most successful military chieftain. Pardon my presumption in making these suggestions. I do it under the impression, that if we could obtain, from eye-witnesses, an exact description of the actual state of the products in their respective neighborhoods, in all the towns of the county, it would afford a mass of information, when continued for several years, of very great utility.

Very truly yours,

J. W. PROCTOR.

To David Choate, Esq., Chairman of Committee on Root Crops.

FRANCIS DODGE'S STATEMENT.

*To the Committee on Root Crops:*

GENTLEMEN,—I offer for premium a crop of Carrots, raised on 192 rods of land; the product being 1046 baskets, a basket weighing 66 pounds, making thirty-four and a half tons, or at the rate of twenty-eight and three quarter tons per acre. The land was a dark loam, resting on a subsoil of clayey gravel, and would be called by most persons rocky land. A crop of carrots was taken from the land last year—the exact amount I do not know. The manure applied was about seven cords of musclebed per acre. This year it had ten cords of manure from the barn cellar spread upon it and ploughed in, the first of May, the plough running about ten inches. After this ploughing it remained a week or ten days, giving time for the weeds to start, when a heavy harrow passed over the ground, killing most of them. On the 2d of May it was ridged up with a small plough, drawn by a horse, going twice in the same furrow. My reason for thus ridging the land was, I thought it less expensive to rake the rocks into the dead furrow, than in any other way to get rid of them; though there cannot be so many rows on a given piece, the seed being sown on the ridge. The rows were twenty-two inches apart. After the land was ridged, a common hand rake passed over them, leaving nearly a level surface.

Upon this ground one pound of seed of the common Orange variety was sown from a wooden machine. The carrots were hoed three times and weeded twice, the last hoing being just before the tops covered the ground. They were dug with a spade, and the tops carefully saved and fed to my cows, the tops at that time being knee high. Perhaps I ought to remark that on one side stood a row of apple trees, that damaged the crop some five tons.

The expense of cultivation was as follows:

| | |
|---|---|
| Interest on land at 6 per cent., | 7,20 |
| Ten cords of manure, at $6 per cord, | 60,00 |
| Spreading the same | 3,00 |
| Ploughing do. | 2,50 |
| Harrowing do. | 2,00 |
| Ploughing with horse and raking, | 4,00 |
| Seed, | 1,00 |
| Sowing, | 1,00 |
| Hoeing and weeding, | 15,00 |

| | |
|---|---|
| Digging, | 21,00 |
| Total expense, | $116,70 |
| Value of crop, thirty-four and a half tons, at 7 per ton, | 241,50 |
| Value of tops, | 7,00 |
| One half of manure to land, | 30,00 |
| | $278,50 |
| Deduct expense | 116,70 |
| Nett profit, | $161,80 |

FRANCIS DODGE,

Danvers, November, 1849.

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## ON POULTRY.

The Committee on Poultry, REPORT:

That they have examined the Fowls which were entered for premium, and have awarded the following premiums and gratuities:

| | |
|---|---|
| To Eben Sutton, Salem, for the greatest and best variety of Barn-yard Fowls, premium, | $5 00 |
| Thomas G. Dodge, Newburyport, fine Chinese or Shanghai Fowls, gratuity, | 2 00 |
| True G. Morrill, Georgetown, best lot of Poland Fowls, premium, | 2 00 |
| E. B. Little, Haverhill, fine Chinese Fowls, gratuity, | 1 00 |
| Daniel Buxton jr., Danvers, Black Spanish Hens, do. | 1 00 |
| Andrew Dodge, Wenham, variety of mixed breeds, do. | 1 00 |
| Stephen Osborn, Jr., Danvers, a large variety of fowls, do. | 2 00 |
| Hiram L. Roberts, Beverly, Malay and Chinese breeds, crossed, do. | 1 50 |
| Ephraim Hathaway, two fine Geese, do. | 1 00 |
| Joseph Peterson, a good lot of Chinese fowls, | 1 00 |
| Benjamin Hill, good specimens of fowls, breed unknown, one Friesland Hen, do. | 50 |
| J. S. Ives, Salem, a cross of fowls, Bantum, and mixed breeds, do. | 50 |
| J. Woodbury, hen, of native breed, do. | 50 |

Adam Nesmith, Beverly, mixed breeds of hens, 1 00
Daniel Putnam, Danvers, a good lot barn yard fowls, do. 1 00

The Committee were much gratified by the exhibition of so large a variety, and such good specimens of the different breeds of fowls. Within a few years past, much attention has been paid to this subject throughout the county, and the improvement of the various breeds is beginning to assume the importance it deserves.

The domestic cock was formerly considered by ornothologists to be a species of the pheasant; they now, however, separate it from that tribe, and make a distinct genus, under the name of *Gallus*, the latin word for a cock.

It is not our intention at this time to go into a description of the origin of this useful bird, which was known, and has been held in estimation from the remotest period of antiquity; our present purpose is, to offer some statistics, which will show the value of this interest to the community; some description of the best known varieties of fowls; and some general rules respecting their rearing and management.

In an article which appeared in the Daily Evening Transcript, published at Boston, November 9th, 1849, the writer says:

"By reference to the Agricultural statistics of the United States, published in 1840, it will be seen that the value of poultry in the state of New York, was two millions, three hundred and seventy-three thousand and twenty nine dollars; which was more than the value of all the swine in the same state; nearly equal to one half the value of its sheep; the entire value of its neat cattle, and nearly five times the value of its horses and mules." By the same statistics it also appears that the "value of poultry in all the states and territories of the Union, was twelve millions one hundred and seventy-six thousand one hundred and seventy dollars.

The value of all the poultry in the Union, at the present time, must be much greater, not only from the increased population of our country, but more particularly from the general interest which is felt in this branch of domestic economy.

In the article in the Transcript, above referred to, the writer further says,—"The amount of sales of poultry, at the Quincy market, for the year 1848, was six hundred seventy-four thousand, four hundred and twenty-three dollars; the average sales of one dealer alone, amounting to twelve hundred dollars per week, for the whole

year. The amount of sales for the whole City of Boston, for the same year, was over one million of dollars. The amount of sales of eggs, in and around the Quincy market, for 1848, was one million, one hundred and twenty-nine thousand, seven hundred and thirty-five dezen, which, at eighteen cents per dozen, makes the amount paid for eggs to be, two hundred and three thousand, three hundred and fifty-two dollars and thirty cents; while the amount of sales of eggs for the whole city of Boston, for the same year, was a fraction short of one million of dollars; the daily consumption of eggs at one of its hotels being seventy-five dozen daily, and on Saturday, one hundred and fifty dozen. One dealer in the egg trade, at Philadelphia, sends to the New York market daily, nearly one hundred barrels of eggs; while the value of eggs shipped from Dublin to Liverpool and London, was more than five millions of dollars for the year 1848."

The foregoing statement will, we think, convince the farmer that the rearing of poultry is a subject worthy of more attention than has heretofore been bestowed upon it. Writers describe many varieties of the domestic fowl, but we shall confine our remarks to some of the well known breeds, and those which we think will be the most profitable for the farmer to keep.

## I. *The Malay Fowl.*

In a valuable treatise on Domestic Fowls, by H. D. Richardson, published in Dublin, in 1849, the author says—"The Malay fowl has, as its name implies, been brought, originally, from the peninsula of that name, at the southern point of the continent of India. He stands very high on the legs, is long necked, serpent-headed, and is in color usually a dark brown, streaked with yellow, sometimes, however, white; his form and appearance are grand and striking in the extreme. This fowl is also frequently called the *Chittagong*. The Malay fowl that were originally imported, were by no means such birds as I could recommend to the notice of the breeder, their size possessing too much offal, as neck, legs, and thighs, and the flesh, moreover, being dark colored and oily. Another variety, that represented by the cut, that has been since introduced, which is well worthy of our attention. As a cross, this Malay has indeed proved a most valuable addition to our poultry yard, the cross-breed possessing all the hardiness of our native domestic fowl, with the gigantic size of the foreign stock."

## II. *The Spanish Fowl.*

This fowl is frequently, but erroneously, called the Italian Fowl.

Mr. Richardson says—"I regard these birds as the result of the highest possible *artificial* culture, and adduce in support of my opinion, their unusually large comb and wattles, characteristics not commonly to be met with among primitive varieties. The color of the Spanish Fowl is black, and the feathers of the legs, thighs and belly, are particularly decided in their hue, and of a *velvety* aspect. One of the most striking characteristics of this fowl is a *white check*, and the comb and wattles are singularly large, simple, and of a very high color; the feet and legs are of a leaden color, except the soles of the feet, which are of a dirty flesh hue. This is a fowl well deserving the attention of the breeder as table birds. They hold a place in the very first rank, their flesh being particularly white, tender and juicy. The hens are likewise layers of the first order."

## III. *The Dorking Fowl.*

In his article on this Fowl, Mr. Richardson says—

"The Dorking would appear to owe its name to its having been cheifly bred in a town of Surrey of the same appellation. That the yeculiarity of *five* toes, or in other words, two hind toes instead of one, is to be regarded as a distinctive character, is bp some writers questioned, and by others wholly denied. For my part, I should say whenever this characteristic is absent a *cross* has been at work. The color of the Dorking is generally pure white, spotted or spangled with black; these colors will sometimes merge into a gray or grizzle. These birds have been long prized, and it is now many years since their superiority over our ordinary domestic varieties was originally discovered and appreciated."

The author of an article (which appeared in April, 1849, in that excellent periodical, the Albany Cultivator,) on "the Dorking Fowl," says of the fifth toe: "The writer has in several instances seen it in the Polish and the Bantam breeds. There is no doubt that it is a mere freak of nature, similar to the production of an extra finger or toe in some families of the human race."

Our own opinion is, that the fifth toe may be considered a distinctive mark of the Dorking. This fowl is well known in our vicinity, and several gentlemen (among others, Charles G. Loring, of Bev-

erly, Allen W. Dodge, of Hamilton, R. P. Waters, of Beverly, and John H. Brookhouse, of Salem,) have found this breed excellent layers, and good fowls in all respects.

### IV. *The Polish Fowl.*

Mr. Richardson speaks of three sub-varieties of the Polish Fowl.

1st. The Spangled Polish, "a bird of extraordinary beauty, and extremely scarce."

2d. The black fowl, with a white tuft on the crown.

3d. A variety, which he says "is the most pure and unmixed of the three. Its color is a brilliant white, with a jet-black top-knot. I have never myself seen a specimen of the breed, and have every reason to suppose it extinct, or nearly so.

The second variety, the black fowl with a white tuft on the crown, is well known to farmers, and is justly considered a valuable breed. These fowls are excellent layers, and seldom inclined to sit; in order, however, to insure their laying well in winter, they must be kept warm. The chickens, when young, are delicate, and much affected by the changes of the weather. Mr. Richardson speaks of "these birds as having been brought from St. Jago by the Spaniards, to whom they owe their first introduction into Europe. Their color is a shining black, and both cock and hen have the white top-knot."

### V. *The Cochin China Fowl.*

Of this fowl Mr. Richardson says:

"This gigantic bird has been only very recently introduced into Great Britain, and it is to that Royal Patroness of poultry fanciers, the nature-loving Victoria, that we owe its addition to our stock of domestic fowls. This variety of fowl so far surpasses, both in size and power, all that we have ever yet seen in the shape of poultry, as to have led many persons not conversant with zoology, on first viewing them, to refer them to the family of *Bustards*. They are, however, genuine poultry. Their general color is rich, glossy brown, deep bay; on the breast is a marking of a blackish color, and of the shape of a horse-shoe; the comb is of a medium size, serrated, but not deeply so, and the wattles are double. Besides their gigantic size, however, these fowl possess other distinctive characteristics, among which I may mention, as the most striking, that the wing is jointed, so that the posterior half can, at pleasure, be doubled up,

and brought forward between the anterior half and the body. The birds can do this at pleasure, and the appearance the manœuvre imparts to their form, has procured for them the title of Ostrich Fowl. The flesh is white and delicate. The eggs laid by the hen of this variety are large, of a chocolate color, and possess a very delicate flavor. They are very prolific.

In an article on the "Kulm or Malay Fowl," in the Albany Cultivator of February, 1849, we find the following remarks:

"The celebrated Cochin China Fowls kept in Queen Victoria's Aviary, are regarded by Martin as only a sub-variety of the great Malay. Valuable stocks have originated from crossing different branches of the Malay with other breeds. Dickson thinks it is very probable that the Dorking originated by a cross between the Malay and the Game-fowl. A writer in the Scottish *Quarterly Journal of Agriculture* is of the same opinion. The Jersey blue indicates a similar mixture."

## VI. *Chinese Fowls.*

The Chinese Fowls with which we have been familiar, differ in appearance from the Cochin China Fowls above described, although in size and color there are some points of resemblance. The original stock was imported from Canton some years since. Of these fowls, we can speak with confidence. They lay well throughout the year, their eggs being of a buff or nankin color; their flesh is good; they are peacable in their dispositions, hardy, and easily raised; their wings are so small in proportion to their bodies, that they are unable to fly over fences. And in this connexion we would observe, that if this breed is kept, the first perch should be, at the extent, not more than two feet above the floor of the hen-house.

## VII. *The Dung-hill Fowl.*

"The Dung-hill Fowl," Mr. Richardson says, "occupies in the poultry-yard precisely the position of the cur-dog in the kennel, being, in fact, the produce of a miscellaneous intermixture of most of the ordinary domestic varieties, and constantly differing in its appearance, with the accidents which may have influenced its parentage."*

Mr. Richardson is probably correct in the rank he assigns to the Dung-hill Fowl, but still it is not improbable that this breed, which

may be called the native stock of our country, might, if the same attention were bestowed upon it, by judicious crossing, become equal to any of the above described kinds.

Many varieties of fowls besides those above mentioned are described in works on poultry, and some of them may be valuable, perhaps as much so as any of which we have spoken, but the Committee think that their duty will be better performed, by confining their remarks to breeds which have been proved to be good. Of the above described varieties, they would particularly recommend the Spanish, Dorking, Chinese and Polish. The Malay, too, crossed with the Dorking, might produce a valuable breed; and the Chinese, crossed with the Dorking, Spanish, or Polish, would, perhaps, prove still more valuable. The Committee cannot condemn in too strong language, the practice of breeding in and in; if this course is pursued, the best stock will soon degenerate.

*Selection of Stock.*

For the choice of a cock, Mr. Richardson gives the following directions: He "should be *in perfect health*—feathers close and rather short—chest compact and firm—full in the girth—lofty and elastic gait—large and firm thigh—beak short, and thick at its insertion. Next to health and strength, age is to be duly considered. Neither select a cock that is too old, nor one that is too young; let the age be from a year and a half to three years and a half. Some cocks retain their vigor till they are even past six years old."

The proportion of cocks to hens must depend upon the object we have in view.

Mr. Richardson says: "If you look for profit to the production of eggs alone, I should say that one cock, if a stout, young and lively bird, may have as many as twenty-four hens. If, however, you want to obtain strong and thriving chickens, you must restrict him to six, or, at most, eight. If your object be the improvement of a worn-out or degenerate breed, the fewer hens you allow to one cock the better, and you should not, at any rate, allow him more than three."

In selecting eggs for setting, we take such as are not misshapen nor small; the number to be used depends upon the size of the hen.

*Manner of Feeding.*

The following method will be found a good one: Once a day, in summer, feed on a mixture of corn and barley, or corn and oats. This will be sufficient, if your fowls have a large enclosure, where they can obtain gravel, insects, worms and green food; if they are confined to a small space, these substances must be supplied them liberally; in winter, keep corn, mixed sometimes with barley and sometimes with oats, constantly before them, as well as pounded oyster shells, burnt bones, or clam shells; occasionally, give boiled potatoes mashed, and mixed with Indian meal, or bran, warm, but not hot. Let them have wood ashes, to dust themselves in, and an abundance of clean water, fresh every day; in freezing weather, the water should be luke-warm. Chickens require no food for the first twenty-four hours after they are hatched; we have, however, been in the habit of giving them water, in about twelve hours from the time they leave the shell. After the first twenty-four hours, for the two succeeding months, give cracked corn dry, three or four times a day; occasionally vary their food, by giving sometimes cooked meat, chopped fine, and sometimes crumbs of bread. We think dry food much better for young chickens than dough, or any substance mixed with water. An abundance of clean water should be constantly before them.

Mr. Richardson says, that "it will not answer to feed fowls wholly upon *any one variety of food;* neither will it be found advisable to feed upon any one *class* of food. Fowls require a mixture of *green* food with *hard* food, fully as much as horses or cattle do. When the birds have the advantage of an extensive walk, they will find this for themselves; when they do not possess such an advantage, you must provide green food for them. Fowl of all kinds require *sand* or *gravel*, as an aid to digestion, being, in fact, necessary to promote a medium of *trituration* in the gizzard, as well as to supply calcareous matter for their egg-shells."

We copy from the Albany Cultivator, of August last, the following article on "Keeping Hens."

"Mr. J. M. Mason, of Orwel, Vermont, usually winters two hundred hens. His practice is, to buy pullets in the month of November. He buys those which were hatched early, as such are the best to lay in winter. They cost about twelve and a half cents each. They are fed, in a great degree, on *mutton*. Mr. M. buys

sheep in the fall at low prices—about what their pelts and tallow are worth. The carcasses are boiled, the tallow saved, and the flesh and bones, after being allowed to freeze, are kept till spring,—a suitable portion being fed to the hens daily. They are allowed, in addition to the meat, a little corn, oats, or buckwheat. They lay well through the winter,—comfortable quarters being provided for them,—and continue to produce eggs in abundance till June. It is found most profitable to sell the whole stock at this period, as they are generally fat, and will bring from twenty to twenty-five cents a-piece. If kept through the summer, they lay but little in the warm months, the eggs will keep but a short time, the fowls grow poor in moulting, and if kept another year, will not lay as well as young ones. Mr. M. keeps hens only, (no cocks,) and is inclined to think he obtains as many eggs, and that they keep better, when not impregnated. As to varieties, he has tried several, and thinks the *top-knots* will generally lay rather more eggs the first season; but their carcasses are of less value than most other kinds."

### *Hen House.*

The Hen House should be dry, airy, and light, and, if possible, have a southern exposure, with glass windows, to admit the sun in cold weather; it should be frequently and thoroughly cleaned out. It should be lathed and plastered, for hens must be kept warm in winter, in order to ensure their laying well. Some persons, in the coldest weather, keep a little fire in the coop, which is a good plan.

There should be two distinct apartments—one for laying and one for roosting—and these should be separated by a partition, having an opening, with a sliding door, for the fowls to pass through.

It is best to have the coop entirely above ground; one under ground is warmer in winter, and cooler in summer, but is always damp, and we are satisfied that hens thrive best, and lay best, in a perfectly dry atmosphere. It is rarely the case that hens lay during the season of moulting, and as this does not take place until the second year, young fowls may be relied upon for laying, while the older ones are moulting.

In most of the hen-houses we have seen, neither the roosting nor the laying apartments have been large enough, and the laying ones have not contained a sufficient number of nests. Frequent white-washing of the coop, the roosts, and the boards enclosing the nests,

will be found useful, particularly in the spring of the year, after the hens have been setting.

### *Diseases of Poultry.*

Little attention has as yet been paid to the treatment of the diseases of poultry; owing to the fact that the death of a fowl or two is not usually of much consequence. The books on poultry, however, prescribe remedies for various complaints to which fowls are subject. We think that most of their diseases arise from neglecting to keep the coops clean, from not giving them fresh, clean water, and from not feeding them properly. Judiciously managed, they are healthy, and subject to few diseases. When a fowl is sick, we separate it from the rest of the flock, and if there seems to be no chance of recovery, we kill it, and put an end to its sufferings.

### *Profits of Poultry.*

The Committee have no hesitation in expressing it as their opinion, that fowls, with proper management, may be a source of profit to the farmer. The care of them will afford amusement, and the observation of their habits furnish instruction to his children.

Our remarks are already extended to such a length, that we have only space to allude to the interesting meeting of "The New England Convention of Fowl Breeders," which was held in Boston, on the 15th, 16th, and 17th days of November, 1849.

The originators of this novel and interesting exhibition deserve the thanks of the community, for a beautiful show of the various kinds of fowls. The public, generally, were surprised at the variety of birds exhibited, and the manifest improvement which has, within a few years past, taken place in their breeding. We trust that there will be a similar exhibition the next, and each succeeding year; it awakens and keeps alive an interest in the subject, stimulates a laudable ambition, and produces a competition which will be productive of highly beneficial results.

In conclusion, the Committee beg leave again to express their gratification at the fine exhibition of poultry at the meeting of the Society this year, and to hope that in future a still deeper interest may be manifested in the subject. The study of animated nature is one of intense interest to an inquiring mind; and although the rearing of a few hens and chickens may to some persons seem a

trifling occupation, yet, when it is considered that in the United States more than twelve millions of dollars are invested in poultry alone, the subject assumes an importance deserving the attention of the whole agricultural community.

For the Committee,

JOHN PICKERING, Chairman.

REMARKS. Accompanying this report are several valuable communications, which our limits will not admit of being inserted. We hope, however, that most of them will appear before the public in some of the journals particularly interested in the subject. The general views are so well stated by the Committee, that it is hardly possible to say more without repeating what has already been said.

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## ON GRAIN CROPS.

The Committee on Grain crops have attended to the duty assigned them, and REPORT:

That there was but one claim for a crop of Wheat which came within the rules of the Society—that of Henry Poor, of North Andover, he having raised on 227 rods of land thirty bushels of Spring Wheat, being a fraction over twenty-one bushels to the acre.

Mr. Poor has also raised on half an acre of ground fifteen bushels of White Flint Winter Wheat, equal to thirty bushels to the acre. The Committee are not aware that the cultivation of this kind of Wheat has been much attended to in this county, although in many parts of our country, and especially in Western New York, whence, we believe, the seed was brought to this county, it is very generally cultivated.

In the transactions of the Society for the year 1833, will be found a statement from the late Hector Coffin, of Newbury, in relation to an experiment made by him with the same kind of wheat, which was received from Western New York, and which produced a much greater yield than that of Mr. Poor. Mr. Coffin states that from eight and one quarter quarts of this kind of wheat, he obtained from a piece of ground not exceeding one quarter of an acre, *twelve* bushels of clean, good grain, plump, and beautifully white.

From these statements, the Committee feel themselves authorized to recommend to the farmers of Essex the cultivation of this kind of Wheat.

The Committee would recommend that a gratuity of six dollars be awarded to Mr. Poor for his half acre of White Flint Winter Wheat, and that his communication be published.

Mr. Poor also raised on 133 rods of ground forty bushels of Barley, but not coming within the rules of the Society, (one acre) the Committee do not feel authorized to award any premium.*

Mr. John Noyes, of Newbury, raised on one acre and two-thirds of a rod of land, thirty-five bushels and twenty-eight quarts of Summer Rye.

Mr. Daniel Osborn, of Danvers, raised on one half acre of land nineteen bushels of Winter Rye, but not coming within the rules of the Society, (one acre,) the Committee do not feel authorized to award any premium, but recommend that the communication of Mr. Osborn be published.

There were four claims for the premium on raising Indian Corn, by the following persons, viz:—Joshua Foss, of Byfield, Henry Poor, of Andover, Daniel Putnam, of Danvers, and Moses Pettingill, of Topsfield. The statement of Mr. Pettingill has not been received.

Mr. Foss raised from an acre 205 bushels of ears, equal to one hundred and two and a half bushels of shelled corn, and the Committee award to Mr. Foss the Society's premium for the best experiment on Indian Corn.

Mr. Poor raised ninety-three bushels to the acre, and Mr. Putnam eighty-four and thirteen-fifteenths bushels to the acre, and we recommend that the statements of Mr. Poor and Mr. Putnam be published.

Samples of the Corn raised by Messrs. Foss and Poor were presented to the Committee. They were both eight rowed, but the ears of Mr. Poor's corn were much larger than those of Mr. Foss, and the Committee are fully of opinion that the medium sized corn is much more profitable to the farmers of Essex, as a general rule, than that of the largest size.

The Committee would therefore recommend that there be awarded to Henry Poor, of Andover, for his acre of Spring Wheat, the Society's premium of $8 00

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* Remark. Where the claimant raises the full quantity required, on less than an acre, we see no good reason why his claim is not entitled to consideration.

| | |
|---|---|
| And also for Mr. Poor's half acre of Winter Wheat, a gratuity of | 6 00 |
| To John Noyes, of Newbury, for his acre of Summer Rye, | 8 00 |
| To Joshua Foss, of Byfield, for his acre of Corn, a premium of | 8 00 |

All which is respectfully submitted, by order of the Committee.

DANIEL ADAMS, Chairman.

Newbury, Nov. 19, 1849.

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HENRY POOR'S STATEMENT.

*To the Committee on Grain Crops :*

GENTLEMEN—I present you with a statement of facts in relation to my success in raising the following crops, to wit :

On 227 rods of ground I have harvested and threshed thirty bushels Spring Wheat, a fraction over twenty-one bushels to the acre.

On 133 rods of ground I have harvested and winnowed out, forty bushels of barley, which is forty-eight bushels three quarts to the acre.

On a half acre of ground I have harvested fifteen bushels White Flint Winter Wheat, which is equal to thirty bushels to the acre. The quantity falling short of the Society's rule, requiring one acre to produce twenty bushels. Samples of the grains will be shown at the Eqhibition.

Allow me to add a word in relation to the growing of Winter Wheat, and a few remarks as to my experience.

I would suggest the importance of this crop to all farmers, being convinced that it is as sure and safe to cultivate as that of Winter Rye, and as little liable to winter kill.

Like all other crops, to be made profitable, it requires good soil and good cultivation, and an advantage to be gained is, that after you have taken off your hay crop, the green sward may be turned in, and you are more sure of a wheat crop than on land that has been two or three years cultivated with other crops.

I have found ashes or slacked lime to be good, sowed on in the

spring, and would also recommend rolling, as soon as the ground is sufficiently dry in the spring. It adds compactness to the soil, and spreads the stocks of the wheat that often come up in clusters. The same advantages are apparent as in rolling newly laid down grass land—pressing in the roots which have become exposed and thrown out by the action of frost.

I should urge the cultivation of Winter Wheat in preferunce to Spring, for good and valid reasons. First, the yield will be far greater. Second, the quality of grain much better. Third, (and the great desideratum,) the grain will ripen three to four weeks earlier than Spring sown, being in advance of the season of rust, which often overtakes Spring Wheat in its ripening process.

I trust the subject of Wheat growing will become of more importance to New England farmers generally; and when they shall have tried and fairly tested the experiment, I feel sanguine, no man calling himself a farmer, will overlook this valuable crop.

Your obd't servant,

HENRY POOR.

North Andover, Sept. 24th, 1849.

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JOHN NOYES'S STATEMENT.

*To the Committee on Grain Crops:*

GENTLMMEN,—I submit for your consideration an account of a crop of Summer Rye, raised on one acre and two-thirds of a rod of land, the present year (1849). The land on which said rye was raised is of a clay loam.

In the spring of 1848, I dressed the land with seven cords of common barn manure, planted it with potatoes, and raised a fair crop for the season.

On the 10th or 11th day of April, 1849, I sowed thirty-six quarts of rye.

JOHN NOYES.

Newbury, Sept. 21, 1849.

DANIEL OSBORN'S STATEMENT.

*To the Committee on Grain Crops:*

GENTLEMEN,—I present for your consideration a crop of Winter Rye, raised on one half acre of land, from one half bushel of seed. The rye was sown the latter part of the month of September, 1848, after a crop of onions had been harvested. The crop was harvested in July. I obtained from the half acre nineteen bushels of sound, heavy rye.

Subjoined is a statement of the expenses and receipts of said crop:

| | |
|---|---|
| For preparing the land, | $1 50 |
| For seed and sowing, | 1 00 |
| For harvesting, &c. &c., | 5 00 |
| Amount of expenditures, | $7 50 |
| For 19 bushels of rye, at $1 per bushel, | $19 00 |
| For one ton of straw, at 60 cents per cwt., | 12 00 |
| Amount of receipts, | $31 00 |
| Amount of receipts over expenditures, | $23 50 |

DANIEL OSBORN.

Danvers, Sept. 26th, 1849.

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JOSHUA FOSS'S STATEMENT.

*To the Committee on Grain Crops:*

GENTLEMEN,—I offer for premium a crop of Indian Corn, obtained from an acre of land, and measuring two hundred and five bushels of ears, or one hundred and two and a half bushels of corn to the acre. The corn is the eight rowed yellow kind, not the largest, but of medium size, and was planted the first and second days of May;—land a dark loam, with light subsoil. In 1847 the land was broken up and planted with corn and potatoes, and well manured in the hill. In 1848, about three-quarters of the land was sowed with oats and barley, without manure; the other quarter was manured at the rate of twenty loads to the acre, spread on, and planted with potatoes.

In 1849 I spread on twenty-five cart loads of stable manure, thirty-five bushels to the load, and ploughed in at least eight inches deep. The ground was harrowed and furrowed, the rows three feet apart, the hills two and a half feet, and fifteon loads dropped in the hills, the corn dropped and carefully covered.

At the second hoeing the corn was thinned out, and only three stalks left in a hill. The rows ran as near North and South, as possible. The corn suffered little from the drought, which I attribute very much to the deep ploughing. At each hoeing, the surface of the ground was kept as near a level as possible. The stalks were cut about the 15th of September, and the succors were all carefully cut out.

The corn was harvested between the 20th and 25th day of October. In addition to the corn there was about fifteen bushels of potatoes on the same land, planted in the outside rows, to protect the corn. The following is the amount of labar done the present season. Four days with men and two with oxen, hauling, spreading, and dropping the manure in the hills. Ploughing and harrowing, one man and two horses, three quarters of a day. Man and horse, four hours furrowing. One man, two days planting, with boy to drop the corn. One man, boy, and horse, five hours cultivating. Hoeing, the first time, four days. One man, boy, and horse, four hours ploughing between rows. Hoeing, the second time, two days' work. Cutting and binding the stalks, four days' work. Harvesting, six days' work.

Yours respectfully,

JOSHUA FOSS.

Byfield, Nov. 8, 1849.

P. S. November 16. I have this day shelled two bushels of eors of the above corn, and found the yield to be one bushel and four and a half quarts.

J. FOSS.

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HENRY POOR'S STATEMENT.

*To the Committee on Grain Crops:*

GENTLEMEN,—I have carefully measured one acre of corn—have measured the ears and shelled a bushel basket full, and have ascertained the exact product to be ninety-three bushels on the acre.

My whole field was a little rising three acres, and the corn is uniformly as large as the measured acre. It suffered very little from drought. A few hills in a dry corner were rolled; many of the spindles were nine and a half and ten feet high. If any of the Committee will inform me how to dispose of the *butts*, I would thank them. I have been advised to sell them for "cord wood;" they are unprofitably large for fodder.

About half of my soil was sward land; the other had been three years in corn. I could not say which was best. I manured and ploughed in—also manured in the hill. At weeding time I applied a handful of ashes to the hill. Planted three and a half feet one way, and two and three-quarter feet the other way. My manure was all made in a barn cellar; which, in my humble judgment, with the working of swine amongst it, the saving of all the urine of the stock, and the saving of *evaporation*, mixed with loam or muck, makes it worth thirty-three and a third per cent. more than if suffered to lie in an out of door exposure, subject to drying winds and washing rains.

My practical experience in farming has been small, but what little I do know induces the belief that a little good farming pays better and gives more satisfaction, than a large amount of poor farming. Make one acre, well manured, do the work of two, half manured—how much labor would be saved?

In seed time, it was not my purpose or thought to offer a crop of corn for premium; but the harvest justifies me in so doing. And should I fail to meet the views of the Committee, it would not deter me in the effort of good cultivation.

Very respectfully,

HENRY POOR.

North Andover, 1849.

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DANIEL PUTNAM'S STATEMENT.

*To the Committee on Grain Crops:*

GENTLEMEN,—The amount of Corn raised by me from one acre of land the present season is not so large as I have before raised, yet it may be entitled to your favor. The land upon which it grew is of a light, loamy soil, having a level surface. It has been used, for

some previous years, in the cultivation of carrots and onions. Last year it was enriched with compost manure, using about seven cords to the acre. The portion sowed for onions produced at the rate of 275 bushels to the acre; that for carrots, at 550 bushels per acre. On the first of May last, three and a half cords of compost manure was spread upon it, then ploughed eight inches deep, taking a small furrow-slice, so that the land was not inverted. On the fourth of the month, it was marked out in rows, four feet apart each way; then planted, putting manure in the hill, of the same kind and quantity as had been spread. The large, eight-rowed corn was used for seed, allowing five kernels per hill. During the month of June, the cultivator was often passed through the growing corn, but little was done with the hoe. The surface was kept level, and sown with grass seed on the 23d of July. The top stalks were cut the first week in September,—corn harvested November 1st and 2d. The product, as you will see by an accompanying cercificate, was 6,365 net pounds; allowing seventy-five pounds per bushel, making eighty-four and thirteen-fifteenths bushels.

*Estimated Expenses of Cultivation.*

| | |
|---|---|
| Ploughing with a pair of horses, in three hours, | 1 00 |
| Two and a half cords of barn cellar manure, at $7 per cord, | 17 50 |
| Four and a half cords of meadow mud and soil, | 4 50 |
| Cost of mixing, two days' labor, | 2 00 |
| Carting and applying, | 5 00 |
| Dropping and covering corn, | 1 00 |
| Seed Corn (1 peck), | 25 |
| Use of Cultivator, | 2 50 |
| Hoeing, | 2 50 |
| Furrowing, | 50 |
| Cutting and binding top-stalks, | 2 50 |
| Harvesting, | 5 00 |
| | $44 25 |

*Estimated Value of Crop.*

| | |
|---|---|
| 6,365 pounds, at one cent per pound, | $63,65 |
| Value of fodder, | 17 00 |
| | $80 65 |

On weighing seventy-five pounds of the corn, it was found, on shelling, to measure one bushel—the cobs weighing nineteen pounds.

Perhaps I may here say, that when a larger yield has been obtained, I have planted nearer together, and have used a larger share of stable manure.

Respectfully yours,

DANIEL PUTNAM.

North Danvers, Nov. 8, 1849.

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## EXPERIMENTS ON MANURES.

No application has been made for the premium, and the Committee have come to the conclusion that no further encouragement is necessary; for every farmer who husbands his means and saves and makes a large quantity of good manure, and applies it judiciously, is so well repaid that he needs no other premium or reward.

We have seen many instances of marked success in composting manures, and some well worthy of imitation. One farmer, whose farm abounds in peat muck, and whose cultivated lands are composed mostly of sandy loam and gravelly loam, has applied compost to his crops with marked success. The last season, most of the crops in our county suffered from drought in mid-summer; his cultivated crops escaped the effects of it. There was nothing peculiar in his method of cultivation, except that he applied his manure to the surface and harrowed it well in, and in cultivating corn and other hoed crops, kept a level surface, without hilling up, as it is barbarously called, and more barbarously practised. This farmer's corn, planted in hills four feet apart, was judged to yield sixty bushels to the acre. His potatoes, planted with compost, mostly escaped the rot, while those planted on long and unfermented manure suffered much from it. His onions yielded well, while on stable dung, muscle bed, and the manures usually applied, the crop, owing to the drought, was in many places almost a failure. For carrots, beets and turnips, this compost has been found equally effectual; nor are its effects less lasting.

This farmer, who finds himself so well compensated that he does

not ask for the Society's premium, has made within the last eighteen months more than five hundred loads of compost manure. At times when the ordinary work of the farm does not press, he employs his laborers and team in carting into his barn and swine yards swamp muck and peat; this, after lying some months and imbibing the droppings of his stock, is ploughed up, and after farther exposure to their tramping and dropping, is thrown into heaps, where it lies ready to be carried to the field. It is thought indispensable to have the muck thoroughly rotten and decomposed. A piece of peat as large and hard as a brick is as valueless for fertilizing purposes as a stone of equal size; but crumble it up, mix it with some heating manure, and decompose it, and a load of peat compost is worth more than a load of barn dung. When a sufficient quantity of dung and urine has not been dropped in the yard upon the muck, it is advisable to add more to the heap, and the farmer is well paid for the additional labor of again forking over his manure; the finer and more *snuffy* it is made, the better it is adapted to furnish food to the roots of plants.

Another method of making compost is, to cart directly into the field where it is intended to use it, your swamp muck or peat, and there compost, by making first a layer of muck about four inches in depth, then a layer of dung,—horse dung is decidedly the best for this purpose,—and so on, till your heap is four or five feet in height, being careful to cover the whole with muck or earth, so that the ammonia shall not escape. In making a compost, you may use one load of dung to three or four of muck, just in proportion to the strength of the manure. In warm weather, with twice faithful forking over, your compost will be ready for use in six or eight weeks, (and this is timely for use in ths autumn,) but it is always essential that the peat should be thoroughly decomposed. Such a compost on loamy, gruvelly, and sandy soils, is better than clear manure for crops of corn, potatoes, vegetables of any sort, and for rye, no manure surpasses it.

But if you want a compost that will make your fields rejoice with a luxuriant harvest, and that will be permanent in its effects, to the muck and manure add ashes in the proportion of twenty-five or thirty bushels to a cord of compost. But wood ashes and leached ashes are too dear. That is true. And all the manure we purchase in our county costs as much, or more, than in any other locality in

the Union. It becomes us, then, to be more saving, and make the most of our resources. The value of peat ashes, compared with wood ashes, has not been ascertained—but peat abounds with us, and a cord of peet will yield more ashes than three cords of wood, if properly prepared and burnt.

The farmer whose practise has been referred to, has burnt peat toppings, imperfectly dried peat, stumps and sods, for the sake of the ashes, which have been mixed with his compost, and he thinks with decided good effects. When burnt in large heaps there is a quantity of charcoal left, which, in the opinion of many competent judges, is the most valuable of all fertilizers, and as far as our observation goes, it has not been over estimated. It can be made with us as cheap as any where else. An acre of peat will produce four or five hundred cords of fuel; in our peat meadows we have at our doors mines more valuable than those of California. How rich and how happy would the farmers of our county be, if they would be content to use and enjoy the blessings Heaven has lavished upon them!

The Committee will not extend their remarks, but the subject of composting manures deserves the attention of farmers, and is sure to reward them for all their efforts. There are many other substances besides peat which are valuable in the compost heap. Let every man improve the means he has, and there will be less occasion for dissatisfaction with our soil and climate, and less disposition for emigration.

For the Committee,

DANIEL P. KING.

December, 1849.

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## ON THE STATE SOCIETY'S BULL.

The Committee who had in charge the receiving and disposal of the Bull which the Massachusetts Agricultural Society kindly offered to the Essex Agricultural Society for their use, until such time as they may order him to be returned, went to Lexington on the 18th of January last, and selected an Ayrshire Bull, a descendant of the

imported stock then in the care of Elias Phinney, Esq., and receipted for the same, in accordance with the rule prescribed by the Trustees of the State Society.

A few days after, the bull was taken to Andover, to Dr. Kittredge's farm, and on the third of February was taken to Moses Newell's farm, in West Newbury, where he remained until April 28th, when he was taken to Eben G. Berry's, of Danvers, for the use of cows. Previous to this time no cows had been put to him.

He remained at Danvers until the first of June, and while there he was put to eight cows. He was then taken to Dr. Kittredge, of Andover, where he remained until the first of July, during which time fourteen cows were put to him. He was then taken to David S. Caldwell's, of Byfield, and has been in his charge to this time, and is to be kept there during the winter. Sixteen cows were put to him in July and August, and eight since. The whole number of cows put to him during the season was forty-six.

The cows put to the bull have generally been of good quality,—a part are of extra quality,—a part have a mixture of late foreign importation, and one is described as being Durham, a great milker, belonging to Charles G. Loring.

The bull is now nearly three years old, of medium size, fine dark red, with a mixture of white, a sprightly, active animal, from English stock, possessing more than ordinary milking properties, according to English publications. It is desirable that all his calves should be raised, especially the heifers, that a fair experiment may be made to test fully the difference in the quality of the half blood cows, when compared with other milk stock, whether of late or early importation. (By early importation we mean what is generally termed native stock.)

If all the heifer calves are raised—say from twenty to twenty-five—and compared with a like number raised under similar circumstances, and in the same vicinity, where no cross of late importation has been resorted to, may we not then be prepared to decide, in some goood degree, whether we have improved upon the original stock imported at the settlement of the country, in the same ratio that the British breeders have done, who have by various crosses originated the variety known there as the Ayrshire ?

Still, whatever may be the result of this experiment, it may not be that the Ayrshire is the best foreign variety to cross with our

present stock; and it is to be hoped that like experiments that are now going on with the Ayrshire and the Devons, will be made with the Irish Kersy and the Herefords. The short horns, or Durhams, have a mixture of their blood in the county, mostly from the bull Admiral, and although he was imported many years ago, and kept, we believe, only at the farm of E. Hersey Derby, in Salem, yet even now his descendants show size and points of fine form rarely to be met with and combined in other varieties; and none will deny that some of them have proved first rate milkers.

Understanding that it is the design of the State Society to distribute the progeny of the stock they imported, we would recommend to the Trustees of the Society to make application to the Trustees of the State Society for an Ayrshire cow, at as early a day as they may have one for disposal, in order that the county may be prepared with full bloods to meet the wants of the dairy farmers in all parts of the county. And also ask for a Devon bull, or a pair of Devons, as soon as our turn may come, should they continue to distribute their favors.

MOSES NEWELL,
JOSEPH KITRIDGE,
JOHN STONE, Jr.

Dec. 19, 1849.

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The following letter, from the best authority as to the introduction of foreign animals into New England, will be read with interest, and fully explains the remark made at the close of the Report on Dairy Products, page 40.

Ten Hills Farm, near Boston, Mass.,
December, 10th, 1849.

John W. Proctor, Esq.,

*My Dear Sir*:—In reply to yours of the 23d ult. and of the 5th inst; the first and only importation, within my knowledge, of Galloway Polled, or hornless breed of cattle into New England, was about the years 1797 to 1800. A gentleman by the name of Joseph Russell, then residing in Boston, imported, I think, six cows and a bull, and placed them on what was then called Hog Island, now

called Belle Isle, situated in the town of Chelsea, and there bred them pure for fifteen or twenty years. I visited this island frequently, and watched the progress of these cattle. I found them hardy, taking on flesh readily, and silky in the handling or touch, and as milkers they were fair, much above the average of our native stock. The calves from this imported stock were generally raised for breeders, sold, &c. At one time, a large portion of the neat cattle in Chelsea were of this Polled breed; but the people of Chelsea gave little or no attention to preserve the breed pure. I soon saw their mixed bloods—their oxen were ill-looking animals, with little loose horns attached to the skin only, hanging and dandling about their faces; their pure blood cows were allowed to go with any little runt of a bull. The late Benjamin Shurtleff, M. D., soon after purchasing a farm in Chelsea, say some twenty to thirty years since, obtained several of these cows, and he always, in speaking to me, thought highly of their milking properties. This breed of cattle have been spread abroad in Massachusetts, New Hampshire, Maine, Vermont, &c., but I think it doubtful if the pure breed, male and female, can now be found in this neighborhood. I mean possessing all the original characteristics.

It has been said that the Galloway Polled has never been improved by cross breeding with any other variety of stock.

There are, it is said, two varieties of the hornless breed of cattle. The Scottish Galloway Polled, and the Suffolk Dun Polled—the last mostly originating from the former. The Galloways giving the richest, and the Suffolk Duns yielding the most milk. I am inclined to think that the Russell importation were of the Suffolk Dun variety. I shall expect to see a good treatise on this subject by you.

Respectfully and very truly yours,

SAMUEL JAQUES.

The Committee* appointed at a late meeting of the Society, to report to the Trustees such action as is proper to be taken in relation to the decease of the

REV. HENRY COLMAN,

WHO DIED AT ISLINGTON, NEAR LOUDON, AUGUST 14th, 1849, AGED 64,

Submit the following:

J. W. PROCTOR, *Chairman.*

NOVEMBER 19, 1849.

The journals of our own and foreign lands have recently recorded the death of REV. HENRY COLMAN, and borne ample testimony to his eminent private worth and public usefulness. The church at whose altars he ministered with distinguished ability, has already rendered a beautiful tribute to his memory.

The homes of affluence and ease, of penury and suffering,—in all of which his presence was greeted with equal cordiality—imparting to the one additional delight by his agreeable vivacity and intelligence,—diffusing in the other unwonted joy, by his sympathies and charities, are now saddened with grief.

A distinct expression of the deep sense of bereavement sustained by this Society, with whom he had so long been connected as associate and Trustee, should be placed upon our Records. The vivid impressions on our minds should be preserved for the benefit of those who may come after us. Services so valuable should not be forgotten. A character like his should be registered for imitation. The possession of his virtues would brighteen and bless every farmer's life, and gladden every farmer's home.

He was, in truth, one of whom it may justly be said, "we shall not look upon his like again." With a childlike simplicity of character that adapted itself to every circle, and to all occasions, he was everywhere at home,—and always, in whatever company he might be, the centre of attraction. He was never at ease except when actively engaged in doing good. Few men have accomplished so much in a life of the same length;—and what he effected causes a deeper regret, that he could not have been spared to complete what he had contemplated.

Mr. Colman was always an ardent lover of nature, and accustomed to find recreation and delight in the study of her works. In the

* Frederick Howes of Salem, Ebenezer Mosely of Newburyport, James H. Duncan of Haverhill, Daniel Adams of Newbury, John W. Proctor of Danvers.

various branches of Agriculture and Horticulture he ever manifested a special interest. His aid was freely given, and not without marked results, to every effort to encourage the study and to improve the practice of these arts. Immediately on coming into this country, he became a member of this Society, and has been distinguished as one of its most active supporters. The farmers of Essex imperfectly know the obligations they are under for the many services freely and voluntarily rendered for their benefit. The pages of our Transactions bear testimony to the zeal and ability with which he accomplished whatever he undertook. Whoever shall glance his eye over these, for the ten years next following 1830, will find more than *two hunderd* from his pen,—marked by a keenness of perception, and felicity of expression, rarely found in such productions. The same sparkling brilliancy which beamed from his eye, radiated from all his paragraphs. His inimitable humor never failed to arrest and enchain the attention of the reader. However repulsive the subject, he had the faculty so to present it, as to avoid offence, without the least sacrifice of truth.

No subject was too abtruse for his philosophic reflection,—none too minute for his searching observation.

When a Commissioner for the Agricultural Survey of the Commonwealth was to be appointed, his ardor in the pursuit of this Science, marked him as the fit agent to accomplish the desire of the State. In discharging the duties of this office he became favorably and extensively known. The fruits of his labor are plainly to be seen in the improved methods of farming; and in the increased interest and respect, with which the pursuit of the farmer is regarded. He inspired many with fresh courage and hope, who were disheartened by repeated failures, or discouraged with little success. He awakened a generous emmulation, which brought into active operation a great amount of dormant energy, and replaced by industry and skill, what in many cases had been lost through sloth or ignorance. If there are any who were inclined to question the utility of this commission;—there are probably few, who could match the industry and perseverance with which its duties were discharged. If there are any who are disposed to cavil at the accuracy of Mr. Colman's facts and opinions, there are probably none who will deny the salutary impulse he gave to Agricultural improvements.

In the autumn of 1842, Mr. Colman embarked for Europe, intending to make such a survey of the industrial and agricultural

pursuits of other lands, as would not only gratify his own long cherished desires, but enable him to present to his own countrymen, examples worthy of immitation.

Upon his arrival in England he became the object of attention and respect, such as had rarely been shown to any private citizen. The privilege of familiar intercourse with the highest classes of society, was freely accorded to him,—securing at once the most refined social and intellectual enjoyments. The field now open before him, expanded beyond his utmost expectations,—and though it offered much to encourage and gratify, yet, to explore it fully, and to reap its fruits, demanded the most exhausting labor. All the energies of body and mind were put in constant requisition. Nor should it be forgotten how the finer sympathies of the heart, always active, were excited, by the examples of suffering and misery constantly presented to his view.

After six years absence, Mr. Colman returned in the autumn of '48; but his health was so impaired that he was compelled to relinquish many of the plans he had contemplated. His ever active benevolence prompted him to many efforts, which his failing strength could no longer sustain. At the unanimous request of this Board, he readily consented to deliver the Address at our late Anniversary, (if life and health permitted, a condition added by him, with that devout reference to the overruling Providence, which characterized every movement of his life) and the hope was fondly indulged by all, of being again enlivened by his wit, and instructed by his wisdom. But our hope was to be disappointed; and death has now sealed that disappointment forever.

To his example and instructions are we indebted as much as to those of any other individual (Col. PICKERING always excepted,) for what we have been able to accomplish. He was ever ready to hold or drive, as opportunity presented. His willingness to help, awakened a corresponding zeal to help ourselves. He not only sustained us in youth, when our FATHER * was called away, but he inspired us with strength and confidence to go alone. Now, having arrived at years of discretion, shall we be unmindful of the guide of our youth? Shall we not prove by our works, that the good seed he planted has taken root, is springing up, and ready to flourish?

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* TIMOTHY PICKERING, first President of the Society.

We would that our own minds may be impressed with the great lesson of our lamented friend's life and death;—a life of pre-eminent usefulness—a death of calm submission and enduring hope. We would commend his example to all whom our pages may reach; and especially to the farmers of our own county, in the belief that by copying his virtues they will best honor his memory, and promote their own usefulness.

It grieves us to reflect, that we shall see his face no more forever. It pains us to remember, that his bones are mouldering in a land far away, "by strangers honored and by strangers mourned." With grateful acknowledgements to the kindness that watched and soothed his dying bed, and closed his "dim eye on life and pain," and to the noble generosity that solicited the privilege to rear a monument over his mortal remains, we respectfully suggest to the farmers of our own Commonwealth, whose citizen he was by birth in her metropolis, and by adoption in all her borders, that a monument be reared in their midst, which, with a generosity as noble, and a grief no less sincere, shall point to the world the name and the memory of the FARMERS' FRIEND.

RESOLUTIONS.

*Resolved*, That we cherish with great regard the memory of the late Henry Colman, who, during many years, and until his decease, was a member of this Society, and distinguished for his zeal, activity, and intelligence in the cause of agricultural improvements; for his various and persevering efforts to obtain and communicate information concerning the practice and present condition of agriculture, in other States of the Union and in foreign countries, as well as our own Commonwealth; and for his numerous and valuable publications, tending to promote and diffuse among his fellow citizens the knowledge of this most important department of human industry.

*Resolved*, That we sincerely sympathize with the family of the deceased, in the painful bereavement they have sustained.

*Unanimously* accepted by the Trustees, and ordered to be published in the transactions of the Society.

Attest:

ALLEN W. DODGE, Secretary.

Hamilton, Nov. 26, 1849.

## REPORT ON ESSAYS.

The Committee* have received but two. Notice of two others was given to the Secretary, but they did not come to hand in season to be examined. Those received relate to *maize* or *Indian corn*,—*one* to its origin and history, the *other* to its culture. Unlike entirely in character,—both have been perused with interest. In our opinion, both will be found worthy of publication; and the payment of the premium of *ten dollars* to each of the authors, is recommended.

The Essay on the origin and history of maize is prepared with much care and ability, and presents a well digested argument in favor of the American origin of this plant. We read this paper with astonishment and delight. The authorities named are not all at our command, but if they are correctly cited (and there is no reason to suppose they are not) it is not easy to see, how the conclusion to which the author has arrived, can be controverted. It must be gratifying to every true American to know that our own land is justly entitled to the honor of originating this plant; whose excellencies have been so well sung by our own poet, in his immortal verse on *hasty pudding*, and in the no less poetical strains of that eminently practical philosopher, Wm. Cobbett, whose treatise on "*his own corn*" is worthy of being read by all. While other lands may boast of their products of *tea* and *coffee*, of universal use—our own can claim *corn* and *potatoes*, of name more humble, but of character, not less valuable.

The Essay on the culture of this plant appears to be the production of the hard hands themselves, that conducted the cultivation; putting forth the suggestions as they sprung from the soil, when following the plow, or wielding the hoe, uncontaminated by any influences of the press. We cordially greet such suggestions. The diversity in the charaeter and style of the papers has increased the interest in their examination. Original thoughts, come whence they may, are always acceptable. Crude ideas, pertinent to the subject, are none the less valuable for want of polish. Even though not entirely correct, if calculated to awaken inquiry and elicit truth, their publication may be useful.

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* E. Mack of Salem, D. P. King and J. W. Proctor of Danvers. Judge Mack was understood to excuse himself from joining in this Report, for want of sufficient opportunity to form an opinion.

The privilege of examining an Essay on Farm Accounts had been anticipated. The failure of its appearance is the more regretted, as the necessity of definite instruction on this subject seems to be almost universally admitted. It is hoped the promised Essay will lose nothing by being wintered over, but that it will come forth, another season, full grown and perfect. If the interval shall be rightly improved, perhaps the author and his readers, will both be benefitted by the delay.

No class of persons, within our knowledge, proceed so much on the "run for luck principle" as the farmer. They cast their seed upon the furrow, and trust Providence for the result. True, she frequently smiles upon their labors, but none the less when they sedulously solicit her favors.

After the day of grace had gone by, an offer was made of an Essay on "Root Crops." But the Trustees, upon deliberation, determined not to be tempted into a deviation from the rule prescribed. Possibly what is lost in one form, may be made up in another. The subject is one on which much can be advantageously said. The comparative value of these crops is but imperfectly understood. Many raise them without distinct ideas of their use. If farmers would carefully observe their effects on the soils on which they are grown, as well as on the animals to which they are fed, and give an account of their observation, they would instruct themselves, and do a good service to their neighbors.

It is gratifying to know that the plan of rewarding well written Essays has found favor with several of our sister Societies. If persevered in for a few years, we have confidence to believe, it will be the means of eliciting and condensing much valuable information.

J. W. PROCTOR,
D. P. KING, } *Committee.*

Salem, Nov. 19, 1849.

# AN ESSAY

ON THE

## HISTORY AND IMPORTANCE OF INDIAN CORN, AS AN AGRICULTURAL PRODUCT.

BY CHARLES LOUIS FLINT.

The complete history of Indian Corn seems never to have been written by an American. The materials for it must be sought in old and uninviting volumes, in the narratives of voyages and travels, and in no less than five or six different languages. The skilful labor required to bring together the various and often conflicting accounts, is by no means small. The writer who would undertake such a task, should possess much knowledge of the botany of the Western continent, as well as that of Asia and the Asiatic isles, to be able to draw the most natural and correct conclusions of his own. He who shall do it, as it should be done, will render a great service to American Agriculture.

In France, Parmentier published a work on maize in 1785. This was soon followed by that of Harasti, in Italy, devoted to the practical details of the subject, in 1788. In Germany, Burger published a work on the Natural History and Culture of Maize, in 1809. Still more recently, the labors of Bonafous, in France, have thrown much light and interest upon the same subject. In Spain, though no very valuable work has appeared on the history of maize, such frequent allusions are made to it in the narratives of the voyages of Columbus, Alonzo Negro, Penzon, Vespucci, and Cortez, as to be of great service in determining its native country. The works of Oviedo and Hernandez, also, are worthy of mention. Still more important is the authority of Humboldt.

The word *zea*, which is applied to maize, is derived from a Greek word which signifies *to live;* and the reason of its application, is the great amount of nutritive matter which the plant contains. Of all

the species of Gramina, the *zea mais* is probably the most cultivated. It is annual, and the stems, which are cylindrical and closed at the nodes, rise to the height of from four to ten feet. The sheaths of the leaves are split, the flowers are in double rowed imbricated bracts, the male flower being placed at the apex of the stem. Each grain is furnished with a style, which extends along the inner side of the sheaths, and hangs like a fine silken thread, forming the tassel. The stamens are three ; the seeds are rounded on the surface, compressed at the sides, and arranged in rows. They are extremely farinaceous, or mealy, which gives the plant its value. The varieties are innumerable. These varieties are owing, in part, to difference of culture, climate and soil. Of these we shall speak more at length hereafter.

Naturalists have long disputed the origin of maize. The question is one of interest, inasmuch as some claim our own as its native country, while others contend that it came from the East. It is proper to state, briefly, the argument as it stands, after which we shall be better able to draw somewhat satisfactory conclusions.

Boëk, the first botanist who wrote of it, forty years after the discovery of America, asserts that it came from Arabia, and was called *wheat of Asia* (ble d'Asia,) *great wheat* and *great reed*.[1] But four years after, the same opinion is maintained by Ruellius,[2] whose assertions are perhaps worthy of respect. Fuchsius also declares that it came from Asia to Greece, thence to Germany, and was called *wheat of Turkey*, because the Turks at that time possessed all Asia. Many writers have taken the authority of the old map or chart of Incisa, of the thirteenth century, to prove that it came from the East. Of such we may mention Sismondi,[4] M. Michaud,[5] Gregory,[6] Lonicer,[7] Amoreux,[8] and Reynier,[9] who was familiar with the history of Agriculture. This chart describes a grain of a golden color, and partly white ;—" granis de colore aureo, et

1. Hist. Nat. du Mais, p. 11, par M, Bonafous.
2. De Natura Stirpium, Lib. xi., c. xxix, p. 428, 1536.
3. De Historia Stirpium, pp. 824–25. 1542.
4. Biographie Universalle, Tom. xxix., p. 542. Note.
5. Histoire des Croisades 4th ed, Paris : 1826. Tom. iii., pp. 348–9.
6. Annales de l'Agriculture Francaise.
7. Naturalis Historiæ opus novum. Frankfort: 1551.
8. Memoire sur le Mais. 1784.
9. Feuille d'Agriculture du Canton de Vaud. T. vii.

partim albo,"—under the name of *meliga*. Crescenzio describes the method of cultivating this grain, which is very nearly the same as that of cultivating maize at the present day. The Portuguese writer, Sata Roza de Viterbo, also, asserts that it was known in the thirteenth century.[1] Whatever may be said of its origin, it seems to have been first introduced into Turkey, from whence it made its way to the West. This is shown by the names which have been given to it in Europe, several of them indicating that it came through Turkey. But according to some Spanish authors, it was brought into Spain by the Arabs.[2] A Chinese writer of the middle of the sixteenth century, draws the figure of the maize as known in China, which is said to correspond with some species of maize now known. Some travellers who have visited the Asiatic isles, have inferred that it was cultivated about the equator, in that vicinity, from great antiquity, and that it passed from these isles into China, and thence to the interior about the Himilaya. John Crawford, who lived for years in the island of Java, says: "Maize is, next to rice, the most important agricultural product among the great tribes of the Indian Archipelago." Mr. Rifaud asserts that some kernels were found in the sarcophagus of a mummy in Thebes, in 1819. The well known orientalist, D'Herbelot, mentions[3] a passage of Mirkond, a Persian historian, which might lead us to suppose that maize was known to the old world, long before the discovery of the new.

Now the question arises, whether the meliga described in the old chart of Incisa alluded to, was identical with the zea mais? Bonafous says on this point, that the description of the meliga from the East corresponds to maize, but that according to the learned author of the Flore d'Egypte, in the description published by order of Napoleon, it can equally well be applied to the millet of India, in which the grains pass in some of the varieties from yellow to white. But Cardan says,[4] distinctly, that maize strongly resembles the plant known in Italy as melica, or *sorghum*, which is the meliga of Incisa. So of several other authorities, as Matthioli and Georges, de Turre. Moreover, Bonafous himself declares that it is evident, to look at it,

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1. Bonafous Hist. du Mais.
2. Valcarcel, Agricultura General y gobierno de la casa del campo. Valencia. 1768.
3. Biblioteque Orientale. 1778. Tom. iii., p, 137.
4. De Subtilitate. Lib. xxi. p. 389 Basil, 1553.

that the meliga is a real maize, and he is, therefore, inclined to believe that it was known in Asia and Europe before the discovery of America.

After this accumulation of evidence in favor of its Eastern origin, it is worthy of remark that some have even asserted that it was known to the ancient Greeks and Romans. But such conjectures as that the black millet brought from India to Italy in the time of Pliny,[1] was the maize, are probably ill founded. Even Mr. St. John, whose great familiarity with the domestic affairs of ancient Greece entitles him to the highest respect, says:[2] "In the region beyond Bactria, a species of corn was found which must unquestionably have been maize, since the grains are said to have been as large as olive stones, and to maize alone can we apply Herodotus' description[3] of the wheat found in Babylonia, the straw of which was encircled by leaves four inches in diameter, and its return from two to three hundred fold. Now in wheat I believe so prodigious an increase is all but impossible; whereas a still greater return might be obtained from the Indian corn." And there have not been wanting those who think that Homer distinctly mentions maize,[4] as well as the naturalist, Theophrastus, in his history of plants,[5] and that allusions are frequently made in the Bible[6] to a grain that could have been no other than maize or Indian corn. Such was the opinion of William Cobbett.[7] It arose, however, from utter ignorance of the ancient mode of planting or sowing wheat, which will be alluded to hereafter.

It is now proper to enumerate, briefly, the authorities on the other side of this question; those who believe maize to be indigenous to America, and that the New World should have the credit of having

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1. Pliny Naturalis Historia. Lib. xxvii., c. 7.

2. History of the Manners and Customs of Ancient Greece. Tom. iii. pp. 406–7. London: 1842.

3. Herodotus. Lib. i. § 193, p. 80, of Wheeler's Ed. Boston: 1842.

4. Od. Lib. iv.; verses 41 and 604.

5. Theop. Historia Plantanum. Lib. viii., c. 4. It should be noticed that his description is very general. Speaking of eight kinds of wheat which had been imported into Greece from Asa, he says that one of these varieties was heavier than the rest. May not this have been the variety to which Herodotus alludes, and the same as that which Mr. St. John says was called camel's tooth?

6. 2d Kings iv. 42. Job, xxiv. 24. Leviticus, ii. 14 and xxiii. 14. Deut. xxiii. 24 and 25. Gen. 41, 5. Matt. xii. 1. Ruth, ii. 14, and Sam. xvii. 28.

7. See also Hooker Jour. of Botany, (Classical Plants of Sicily,) 1834. p. 219.

given it to the Old. And here, it may be, we shall find naturalists not less celebrated than those already mentioned. Among the first, in point of time, is Dodonaeus,[1] who lived in the middle of the sixteenth century, and wrote but shortly after Bock and Fuchsius. After him came Camerarius,[2] then Matthioli, one of the most learned and justly celebrated men of his time. He affirms[3] that Turkish wheat (*ble turc*) is not a proper name for maize; that "it should be called Indian wheat, (*ble d'Inde*) and not Turkish wheat, because it came from the West Indies, and not from Asia nor from Turkey, as Fuchsius believes." So Ray[4] and others say that Fuchsius was mistaken, and that it came from the New World. M. Dumeril thinks it was called Turkey wheat in consequence of its long stalks. So the authority of Heynius is to the same effect. Turcici nomen non ex vulgo accepit, quod ex Turcorum terris exportatum fuit, verum *ab aristarum similitudine aliqua cum crista seu pluma in apice Turcorum capitibus imposita.*

Gerarde, after describing several kinds of "Turkey wheat,"[5] which were evidently species of maize, goes on to say: "These kinds of grain were first brought into Spain and then into the other provinces of Europe, not (as some suppose) out of Asia Minor, which is the Turk's dominions, but out of America and the Islands adjoining, as out of Florida and Virginia, or Norembega where they used to sow, or to set it, and to make bread of it, where it groweth much higher than in other countries." He also takes care to say that it was

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1. Stirpium Historiae Pemptades. Antwerp: 1583.

2. Hortus medicus et philosophicus. Frankfort: 1588.

3. I Discorsi nei sei libri di Dioscoride. 1645. Described also in the Commentarii in lib. primum Dioscoridis, p. 319. 1598.

4. Historia Plantarum. London: 1686.

5 Herball or General Historie of Plantes, p. 82, London, 1633. This curious old work contains plates of the different species of maize then known, as well as the millet and the sorghum with which the maize was often confounded. The plates show a very marked difference. It is amusing to see how little the true qualities of maize were known at this time in England. Turkey wheat, he says, doth nourish far less than either wheat, rye, barley, or oats. The bread which is made thereof is meanly white without bran; it is hard and dry as Bisket is, and hath in it no clamminess at all; for which cause, it is hard of digestion and yieldeth to the body little or no nourishment; it slowly descendeth and bindeth as that doth which is made of Millit or Panick. We have as yet, no certain proof or experience concerning the virtues of this kind of corn; although the barbarous Indians, which know no better, are constrained to make a virtue of necessity and think it a good food; whereas we may easily judge that it nourisheth but little and is of hard and evil digestion, a more convenient food for swine than for men!

not known to the ancient Greek and Latin authors. M. Parmentier is of opinion that it had American origin.

M. E. Discourtilz also says maize was introduced into Europe by the Spaniards, who brought it from Peru.[1] It is important to mention, also, the authority of Thomas Nuttall,[2] who thinks it was indigenous to tropical America. The same conviction is expressed by the learned Mrs. Somerville.[3]

It remains to speak of the important conclusions of Baron Humboldt. "It is no longer doubted," says this learned naturalist, in his Essay on New Spain, "it is no longer doubted among botanists, that maize, or Turkey corn, is a true American grain, and that the old continent received it from the new." Again, he says: "On the discovery of America by the Europeans, the zea maize (*tlaolli* in the Aztec language, *makiz* in the Haitian) was cultivated from the most southern part of Chili to Pennsylvania." Massachusetts, he might have said, for such was the case. "According to a tradition of the Aztec people, the Toultecs in the seventh century of our era, were the first who introduced into Mexico the cultivation of maize, cotton, and pimento. It might happen, however, that these different branches of agriculture existed before the Toultecs, and that this nation, the great civilization of which has been celebrated by the historians, merely extended them successfully. Hernandez informs us, that the Otamites even, who were only a wandering and barbarous people, planted maize." Thus we see it was cultivated in America long before the discovery, and formed a most important article of food for centuries.

Having candidly stated the various authorities on this question, we are now prepared to proceed in our investigation. And first, let us say, that though we should consider it no small gift of the New World to the Old, it is not difficult, on a question which does not effect either personal or national honor to free our minds from prejudice and partiality, and study with a desire to ascertain and establish the truth. We are not convinced by the assertions of some or by the arguments of Bonafous and others, to prove that maize originated in the east. They have not made out a satisfactory case. It

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1 Flore Pittoresque et Medicale des Antelles, Paris, 1829.

2 Nuttall's Works, vol. 1, p. 203.

3 Physical Geography, p. 247.

should be borne in mind that the authority of the early writers is not always to be relied upon. They possessed none of the advantages which modern science has laid open, to pursue their investigations. They could not be accurate on questions of this nature. It is very probable that maize came into Europe by way of Turkey and the Levant, which gave it the name which it then bore, of Turkish wheat, &c., and which would be likely to deceive a naturalist of the sixteenth century, in regard to its origin. Then it is very easy to conceive how a careless statement made by a writer three hundred years ago, would be taken on his authority, and thus gain a credit which it did not deserve. Instances of this occur on almost every page of the old historical writers, as any one who is at all familiar with the works of Sir Thomas More and the old chroniclers, can testify.

It is a remarkable fact that maize is not mentioned by travellers who visited Asia and Africa before the discovery of America. These travellers to foreign parts were often very minute in their descriptions of the productions of the soil. But the maize was never described in Europe until after the discovery. This, most certainly argues very strongly that it was not known.

It is also a remarkable fact that it was universally cultivated on the western continent at the time when the Europeans landed here. This is proved by P. Martyr,[1] Ercilla,[2] Jean de Lery,[3] not to mention Torquemada[4] and others, who tell us that the first Europeans who set foot on the New World saw among other wonders a gigantic wheat with long stalks, and that this wonderful wheat was the maize. The harvesting of it was celebrated by the people with religious festivals. Sacrifices were prepared with it. With it the Mexicans formed idols. It constituted almost the only food for all the tribes in Mexico, in Peru, in Brazil, at the Orinoco and the Antilles. It served for money. A theft of seven ears the Mexican laws punished with death.

It is a still more curious fact that immediately after its introduction into Europe, it spread with great rapidity into every country and province where the climate was thought to be suited to it. Now

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1 De Orbe novo decades. III. 1516.

2 Alonzo de Ercilla, Araucana, Madrid, 1577.

3 Historia d'un voyage fait en la terre du Bresil, 1723.

4 Della Monarquia Indiana Tom, I. p. 158.

if it had been known in Asia, if it had been cultivated by the Turks, how could all these things have happened? Why was not so useful a grain introduced into Europe before, or why did it spread so rapidly when it was introduced? A somewhat extensive trade was carried on between Europe and some of the Asiatic Isles long before the sixteenth century, so that if Indian corn had been known or cultivated in Asia, there is every probability that it would have found its way into Europe. The plant called *sorghum* was known and cultivated in Europe and somewhat in Asia and Africa, and this it was with which maize was so often confounded. This, however, was not a species of Indian corn.

But the strongest evidence of its American origin is, it seems to us, that it has been found growing wild in some parts of the western continent,[1] which is not the case in any other part of the world. This alone would seem to prove it to be indigenous to America. We need say nothing of the fact that grains of Indian corn have been found in the mounds of Peru. These mounds were probably built three or four hundred years before the conquest. There can be no doubt therefore that it was cultivated on this continent from time immemorial.

But it may now be asked, how are we to explain the numerous allusions to a grain, which if not Indian corn, must have nearly resembled it? We have already remarked that many of the assertions of the early botanists confounded maize with sorghum. Other allusions, and those by the sacred writers, refer to wheat, which was indigenous to Asia, and almost universally cultivated. Mr. St. John admits[2] that there was, and still is, in that part of the world, "a very large grained wheat called camel's tooth," which would naturally have given rise to the expression, "ears of corn," so often used. The misconceptions of Mr. Cobbett and others in regard to these references, arise from ignorance of the ancient mode of sowing wheat, or corn, as it was universally called by the old writers. Large fields of it were sown, between which a narrow road or path was left for the public. This road was just wide enough for the carriage to pass without injury to the grain, there being no fences for protection,

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1 A variety has been found in Paraguay which the Indians say grows wild in the woods.

2 History of the manners and customs of ancient Greece, Tom III. p. 407.

so that it might literally be called "going though the cornfields." It was sometimes gathered with the sickle, sometimes by passing through it and plucking off the heads or ears, the reaper having an apron or pouch to drop them into.

Neither wheat nor rice were known to the first inhabitants of America and we may with as much truth say that Indian corn, and the potato were neither cultivated in Asia nor the South Sea Islands.

It is well known that maize was introduced into Japan by the Chinese.[1] But there are no grounds for believing that the Chinese themselves possessed it until the sixteenth century. We persist then, with Humboldt, in believing that maize was not transported from the centre of Asia to the table lands of Mexico. And, moreover, if we suppose that it was thus transported from Asia, how are we to account for the infinite varieties found in America which, most certainly, were not found in Asia? Is it not more natural to suppose it to have originated where every variety of it was found, than where only one or two varieties, and those doubtful ones, were ever known to grow before the discovery of America by the Europeans? We may remark, also, that if we suppose that a species of maize was actually known in Central Asia, or to the Chinese, it may have been the case that the Indians of the extreme N. W. of America had communication with the extreme N. E. of Asia, and that some one or two species, by this means, found their way into Asia. If such communication existed, which we do not believe, the fact that it was found in China and about the Himalaya, which is by no means established, would not prove it to be indigenous to Asia. Or, if one or two species were actually found, the fact that there were no more in Asia, and so many in America, would be a strong evidence of its being exotic in Asia.

This accumulative evidence seems to us to be satisfactory and conclusive. It was the custom among some of the earlier writers, to speak of America as being sterile and wanting in the most important vegetable productions. They little suspected the surpassing richness of the country which had been made known to astonished Europe.

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1. Thunberg, Flora Japonica, p. 37.

The infinite variety of plants indigenous to Mexico, to Central and to South America, where we suppose maize to have originated, is beyond description. No country on the globe can excel them in the boundless luxuriance of native, indigenous plants. Here even the giant trees of the forest are loaded with flowers of every hue and variety. The purple and the blue and the scarlet, the brilliant yellow and white, twine and mingle with every variety of green. Here are the fig, the sugar-cane, the indigo, the aloe and the pepper plants, the passifloreae, the pine apple and the endless varieties of the cactus with its splendid and variegated blossoms. Here is the night flowering cereus, the alspice myrtle, the clove, the nutmeg, mango guava and an infinite variety of palms, rising often to the height of two hundred feet. Here too, are forests of logwood and mahogany, of colossal grandeur, often surrounded with shrubbery and parasitic plants, with a foliage so dense that the rays of the sun can never penetrate. Here is the mimosa, majestic in its size, the beautiful acacia, and grasses that rise to the height of forty and fifty feet, with tree ferns and reeds without number, often seen a hundred feet high. The golden and rose-colored bignonias add their grace and beauty to the teeming masses of blooming life. The laurels become splendid forests. Plantains grow to gigantic size, and beneath all spring lilies and bulbous plants as if not an inch of soil could be spared. Here also the endless variety of creeping plants rise through the twining limbs with their myriad and brilliant flowers. Thousands of species still remain undescribed, and there may be thick and tangled forests which the foot of civilized man has never trodden. Nor is this rich luxuriance for a season alone; for the spring, or the summer, or the autumn. It is everlasting. The unfading verdure hides the very appearance of death. The trunks of the decayed, matted and heaptogether, form only rich beds for the living to spring forth in the newness of life. The eye is sated with beauty. The air is filled with perfumes, and one is lost in wonder and amazement at nature herself. This is the native country of maize. A country unparalleled in the magnificence of its flora, and unequalled in the depth and richness of its soil!

The importance and value of Indian corn are too well known to every practical agriculturalist, to need illustration. Upon this part of our subject we shall dwell but briefly. On every part of the globe where the hand of civilization has broken the turf, this beau-

tiful grain receives a large share of attention. In the Western continent it is raised from Canada to Patagonia, and the islands of the South Sea, through almost every variety of climate and people, and over an extent from North to South of more than seven thousand miles. It was introduced into Africa by the Portuguese in the sixteenth century, and is cultivated more or less from the Mediterranean Sea and the Libyan Desert to the Cape of Good Hope. In Java and the Asiatic isles it forms an important product. In Central Asia it is known and valued, as well as in Australia and the islands of the Indian Ocean. In Europe it is extensively produced, in Hungary, in Lombardy, in France and Spain, and we might almost say from the Ural chain to the Atlantic. No grain could secure such favor from all parts of the world, except from its intrinsic value. No other grain, in fact, except rice, is so extensively cultivated.

Its flexibility of organization makes it very easy of adaptation to climate and soil. Though it prefers moist and rich soils with strong heats, there are species of it which can be raised in tropical climates at a height of more than nine thousand feet above the level of the sea. The warmest regions of the torrid zone produce maize in abundance, where three crops can be taken in a season, while the short summers of Canada have a species adapted to them. This cannot be said of rice, which requires great heats, and cannot endure a climate of high latitude. It is proper here to notice briefly the more important varieties of Indian corn. There is one common in Hungary, which M. Parmentier endeavored to introduce into France. It ripens in two months. A still more remarkable species is mentioned by Oviedo[1] as being cultivated on the shores of the South Sea, which ripens in less than forty days. There are to be found in Spain alone, no less than one hundred and thirty different varieties. The species most common and valued here, are the large yellow, the red, which differs from it only in color, the sweet corn, and what is, perhaps, the most important, the Canada corn, known best in Maine and Canada from its early ripening. Its yield is thought to be equal to the larger varieties. Seventy-five bushels of it, to the acre, have been raised at Nahant, as exposed a place, doubtless, as any in the county. The Egyptian corn has been preferred by some, while Cobbett's has the preference with others. These varieties have

1 Lib. vii., c. i., p. 103.

been tried together, in the same field, and the Egyptian found to be the earliest, and the Quarantine, or Cobbett's, next. There is also a species called Valparaiso,—sometimes, also, called Oregon corn, which, when roasted, splits in the form of a cross. A species called Tuincata, is found in Paraguay and in some parts of Oregon. Each kernel is covered with a glume, or husk. Owing to the difficulty of separating the grain from the glumes, it is of little value. The zea caragua is a corn found in Chili, said to be hardy and long-lived. The Chinese have a remarkable variety called tree-corn, the ears of which hang at the ends of the branches. Nuttall describes a variety called the Early Mandan Corn, cultivated by the Aborigines about the Missouri. It ripens in a climate where no other variety could exist. Other species might be described, but it is sufficient to say they probably all sprung from the common yellow, and that they differ from each other in the color, form and size of the grains, and in the time of maturity.

Indian corn ripens at a time when most other grains have been harvested. It therefore gives employment when there would naturally be but little else to do.

But what gives to Indian corn its great importance, is the actual amount of nutritive matter which it contains. It is said to be third in this respect, wheat and rice containing a somewhat greater amount, though many place maize second only to wheat. We have the analysis of Indian corn, which may be given as follows:

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| Silica, | 38.45 |
| Potassa, | 19.51 |
| Phos. of Lime, | 17.17 |
| Phos. of Magnesia, | 13.83 |
| Phos. of Potassa, | 2.24 |
| Carbonate of Lime, | 2.50 |
| Carb. of Magnesia, | 2.16 |
| Sulph. of Lime and Magnesia, | 79 |
| Silica, mechanically found, | 1.70 |
| Alumina and loss, | 1.65—100 |

making in all one hundred parts. In other words, we may say, on the authority of Dr. Dana, of Lowell, there are in it of

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| Fat forming principles, gums, &c., | 88.43 |
| Flesh forming principles, gluten, &c., | 1.26 |
| Water, | 9 |
| Salts, | 1.31—100 |

A glance will show how greatly the fat forming principles predominate in the one hundred parts. There is hardly any grain which yields so much for the support of animal life. The difficulties and contingencies of raising wheat in the eastern parts of Massachusetts have discouraged its cultivation, so that we may say that Indian corn is by far the most profitable crop, especially, as, when the offal is properly managed, there is no grain which restores so much to the ground. It is a fact, too, that it may be cultivated longer in succession than any other grain ; and if kept dry, it may be preserved for an indefinite period without injury. The ease and rapidity with which it recovers from a drought is truly remarkable. Many predicted during the last summer that the corn crop would be destroyed. The leaves were badly curled, and there was every indication that the crop would greatly suffer. Every one remembers how speedy was its recovery, and how rapid its growth after the change of weather.

As a fattener for cattle, swine and poultry, we may say that Indian corn is unrivalled in utility. The analysis of Dr. Dana, as given above, is sufficient to show, at once, how important it is for such purposes. As a food for man it is extensively used, though by some thought to be too stimulating.

The most common mode of cultivating, is to plant in hills about four feet apart. But our impression is, that where the largest crops have been obtained, the seed has been sown in rows or drills. In either case, it is now pretty well settled among farmers, that it seould not be hilled, as was the custom but a few years since. There seem to be several reasons for this. If the earth is drawn up around the stalk at the last hoeing, it sends out new roots which divert much of the nourishment which would otherwise have gone into the stalk and the ear. It is not unfrequently the case that *aerial* roots, even, are emitted from the lower joints of the stem above the ground, and descending, fix themselves in the soil. This takes place on a very much larger scale, if these joints are surrounded with earth. If the earth is taken from the intermediate spaces, so as to leave hollows, the long branching roots become exposed to the sun, and cause the plant to feel the drought too severely.

Kelp, which washes up in winrows upon the sea-shore, has been found to be of valuable assistance to maize. It should be equally spread over the ground, and ploughed in.

But it was not our design to allude to the modes of production. Every practical farmer is already familiar with these from experience, to say nothing of the easy access to our well-conducted agricultural journals, which keep up with every new improvement in all departments of husbandry. If we have succeeded in throwing some light and interest over the history of this valuable grain, our aims are accomplished.

In conclusion, we would say, that if America has furnished the Old World with maize, the potatoe, tobacco, cocoa, vanilla, and other plants useful to man, she is herself indebted to the Eastern continent for wheat, barley, oats and rice, for the coffee plant, now one of her staple products, for oranges, lemons, peaches, and many other plants which now grow in great luxuriance both in the tropics and in our temperate climates. These plants Europe had been receiving for more than twenty centuries, from the Greeks and Romans, and from the nations of the East, till they had accumulated in rich profusion upon her Western shores. Now, many of them, together with many of our own, are borne on to the islands of the South Sea, still further West, whither the restless march of civilization is tending. The natural gifts of one country to another, facilitated by commerce and the arts, are fast binding together the remotest corners of the globe. Let the full tide of civilization roll on! Let commerce bear to every land, and to every island in the sea, products which shall humanize mankind, and increase the aggregate of comfort and happiness! These are the fruits of peace!

# AN ESSAY

ON THE

## CULTIVATION OF INDIAN CORN.

BY WILLIAM R. PUTNAM

The cultivation of Indian Corn is one of the most important labors of the farmer. Accustomed to it from our youth, it is not easy to discriminate what is necessary to be done. It will be my purpose to notice such incidents in the culture of this plant, as have seemed to me most worthy of attention. My ideas have been gathered in the field, and not in the closet. If they are found rude and unpolished, my engagements, from "early morn to latest eve," must be my apology.

Who does not remember, that almost as soon as he knew that three and three made six, he was required to put that knowledge in practice, by dropping that number of kernels in each hill? Who does not remember the manly pride he felt, when he first performed that extraordinary feat of horsemanship, in guiding the old horse straight between the rows of corn, and turning him round without getting his legs over the traces, or stepping on the corn? Who has forgotten the great responsibility he felt, the first time he was permitted to go alone to mill with his bags of corn?

Before treating of the cultivation of Indian Corn, it may be proper to inquire, if it is a crop of sufficient importance to demand increased attention from the farmers of the county.

Some are of the opinion, that with the present high price of labor and manure, we cannot compete with Western farmers in raising corn; that with the increased facilities for transportation, we shall soon be run off the track; that we had better buy our corn than raise it. This may be good economy for those who are situated near

our large towns, so that they can daily carry their produce to market, and can obtain manure without feeding out their crops to stock upon the farm; but for most of our farmers, who who are in a great measure dependent upon the manure of their stock to enrich their lands, it is better to raise corn than to buy it.

Taking the average price of corn for the last six years, we may safely estimate that a bushel of ears of corn is worth forty cents. I am aware that it usually costs nearly this sum to raise corn—but then it is one of the best preparatory crops for all others; and the fodder is of much value.

The corn crop possesses some advantages over most other crops. The seed costs but little; it is comparatively sure; it can be kept for a long time; it requires but little attention in haying time.

It will be my object, to show, how the farmers of Essex, by turning their attention to this crop, may prepare their land to produce more hay, thereby enabling them to keep more stock, and consequently increasing their supply of manure.

The main object of most farmers, in cultivating their land, is to prepare it to produce more grass. Much of it, after it has been planted, and sown with grain and grass in the usual way, produces but little more than it did before ploughing. Some of the agricultural journals, within a few years, have recommended turning over grass land and seeding it down again, without an intervening crop. On very low, wet land, this is a good method; but on land that will admit of cultivation, it is better to plant corn, and sow the grass seed among the corn.

Land that can be ploughed smooth enough to sow on the furrow in August, may be ploughed as cheap for corn in November, or the following spring. The expense for applying the manure will be no more. If we use manure sufficient to produce two tons of hay, we may expect one hundred bushels of ears of corn per acre. The expense for planting an acre, after the manure is put on, will not exceed two dollars—the cultivation, while growing, need not exceed five dollars. The corn fodder, and what hay it will produce more for the next four years, will pay for the extra expense of planting and cultivating, so that we shall have the one hundred bushels of ears of corn as gain, of one method over the other. This method of renovating old grass land, has many advantages over that of seeding on the furrow. It pulverizes the soil better, and we have a ro-

tation of crops, in some measure; as the corn roots decay, they furnish food for the grass; and it is not so liable to be winter killed. There are hundreds of acres of land in this county, not exactly pine plain land, which produce but little hay, as they have usually been cultivated. When the manure for corn is all put in the hill, and the grass seed is sown among the grain the next year, it is either injured by the dry weather of summer or the frost of winter; or else it is so poverty-stricken, that it does not grow. Such land will yield a good crop of hay, if we apply a good dressing of well composted manure, and sow the grass seed among the corn, the latter part of July.

If we wish to put a part of the manure in the hill, we should furrow it deep, so that the manure may be below the surface. This will keep the land level, and without any hills about the corn. When the corn is harvested, the stalks should be cut near the ground. The following spring, when the frost is out about an inch on the surface, with a sharp hoe cut them off, while the roots are held fast by the frost. As soon as the ground is dry, so that it will not be injured by the cattle, it should be rolled. It is much better mowing on a corn stubble than it is on a grain stubble, for the old grain stubble injures the edge of the scythe.

When we sow the grass seed, it is well to count the rows—then we may know how much seed we have to sow in each row; then take one half of the seed and go through the rows one way, then go the other way with the remainder.

The cultivation of roots for feeding stock, is by some writers highly recommended; but I think it not best for the farmers of this county to depend so much upon roots for their stock, as English farmers do, who cannot raise corn. Our cattle will do better when fed upon different kinds of food, than when confined to one sort.

Every farmer ought to raise some roots to feed to his stock, when he is using his coarse fodder.

From the first view of the statements published in the Transactions of the Society, it would seem that the carrot crop was much more profitable than corn. But it may not, under all circumstances, be best for the farmer to apply so much of his manure to one acre for carrots, and to neglect the rest of his farm. The question is not, how we can raise the most from one acre of land, but how we can, with the least expense, keep the most stock upon the farm? If we

take the ten cords of barn manure that was applied to one acre of carrots, and compost it well with meadow mud and soil, this will manure four acres of corn, which will probably yield fifty bushels to the acre. This, for the farmer who has grass land that needs ploughing, would be better than to put it all on one acre for carrots.

I have found that the same land, manured alike, will yield about one third as many bushels of corn on the ear as of carrots; or, in other words, we can get a peck of cob meal as cheap as a bushel of carrots. The question then arises, which is worth the most,—the peck of meal or a bushel of carrots, for stock? My opinion is, that if we cut the hay, the meal will be worth the most;—but if we feed on dry hay, not chopped, the carrots.

### *On Ploughing Land for Corn.*

The best time for breaking up a stiff, hard soil, is late in the autumn, that it may be more exposed to the action of the frost. For a light soil, it is better to defer the ploughing till about the time for planting. It is often more convenient to plough early in the spring, as soon as the frost is out, when the land can be ploughed much easier than at any other season; but it injures most land to plough it then; it hardens like mortar as it dries, and it will require more labor to keep it properly cultivated.

On warm, loamy land, where the corn is often injured by the cut worm, it is well to plough the land in August, then cross plough in the spring; this will destroy the worms.

The yellow wire, or stick worm, which often injures the corn about the low places in our fields, is not killed by ploughing. Some recommend carting sand or gravel on to such places, to destroy the worms; if it does not kill them, it will probably help the soil.

### *The proper depth for Ploughing.*

The old adage says, "plough deep, and you will have corn to sell and to keep." It may appear presumptuous to question the truth of anything that has passed into a proverb, but I think this assertion much too broad. Deep ploughing is an important requisite, yet this alone will never secure a good crop. If our quantity of manure is small, and the soil a cold one, which has never been ploughed more than five inches deep, if we were literally to adopt the adage, and plough deep, we probably should have corn neither to sell nor to

keep. My advice to those who wish for the permanent improvement of their soil is, to plough no more land than they can manure well, and to plough this an inch deeper each successive year; by thus mixing the subsoil with the surface soil, both will be improved. I have often thought it strange that so little difference should be made by the Trustees in ploughing with single and with double teams; unless it is thought that land ought never to be ploughed more than seven inches deep. If premiums were offered for ploughing five, seven, and nine inches deep, we should have the different sizes of ploughs brought into use, which the farmers need, and it would give the owners of the land where the ploughing matches are held, a good opportunity to see which is best, deep or shallow ploughing.

*On the use of the Subsoil Plough.*

We have not seen that benefit resulting from the use of the Subsoil Plough which we anticipated, when we procured it, in 1841. We used it for three years, without perceiving any advantage from it. Since then we have not used it ourselves, nor had any opportunity to lend it to our neighbors. The cost of subsoiling, I estimate to be five dollars per acre. I think that two dollars extra expense in cultivating the crop while growing, will benefit it more than subsoiling. Most of the land upon which we used this plough was a loamy subsoil; perhaps some other soil would be helped more by the use of it.

I have no doubt that the subsoil plough may be advantageously used for some crops; but for a corn crop, it will not usually pay for the expense.

My view is this. Lands that are highly manured, will be able to sustain a greater crop, but subsoiling does not enrich a poor soil. Our crops of corn do not generally suffer so much for the want of moisture, as for the want of proper food. It would be poor consolation to a ship's crew to know that they had water enough, but were out of provisions. The water which the camel carries in his extra stomach would be of little use to him in crossing the desert, if he could not obtain provisions by the way. Until we have well manured and pulverized the surface soil to the depth of ten inches, I think we may as well let the subsoil alone.

*On turning the furrow slice flat at the time of breaking up.*

I am aware that there is a difference of opinion on this subject. Some say that the furrow slice should be lapped, or set obliquely, so that the land may lie lighter and be more easily cultivated. Experience has taught me, that land turned flat can be cultivated the easiest, and will produce the best crop. If we have a foe to contend with, we can usually manage him best if we lay him flat upon his back. When we plough tough swarded land, abounding in witch grass, eight inches deep, and turn it flat, we shall have four or five inches of soil on top without any roots in it; but if it is set obliquely, we shall have part of the roots on top, and they will be growing up, between the furrow slice, all the season. Our aim in breaking up land, should be to place the grass and roots in that position where they will decompose the soonest; if set obliquely, the harrow brings many of them to the surface, so that they will not rot. I do not want a breaking up plough to pulverize the soil, but to turn it over, and put the grass and roots out of the way, so that I can pulverize it with the harrow and horse plough.

*On Preparing and Applying the Manure for the Corn crop.*

It has ever been my lot to do a full share of this part of the work upon the farm. Perhaps my remarks will smell more of the manure fork and shovel, than of the oil of the student, or the elaborate experiments of the chemist.

Formerly it wast he custom to apply all the manure in the hill. For some years past, many have spread all their manure. It is an important question for the farmer to settle, how he can best apply his manure so as to supply the growing corn with the proper nutriment at the right time. If the manure is well rolled, and all put in the hill, it will produce too great a growth of stalks, and fail of affording proper nourishment when the corn is filling.

If we use new manure, and spread all of it, the corn does not start soon enough to get fully ripened. We have succeeded well in some fields, by ploughing a part of the manure under the sod at the time of breaking up; in other fields, we could see but little advantage from green manure thus ploughed under. Why this difference? The top soil was nearly alike, but the sub-soil was different. My view of this is, that where the soil and sub-soil are warm, so that a decomposition soon takes place, it is well to plough under a part of

the manure; but if the sub-soil is cold, it is not best to plough it under. To illustrate my meaning, suppose two cooks preparing their dough for a batch of bread and both by the same rule. When they set it away to rise, one puts it upon the cellar bottom, the other upon the warm bricks of the hearth; the latter has good bread, but the former complains of the rule, as the bread will not rise.

Is it good economy to spread green manure and harrow it in for a crop of corn? Some farmers are of the opinion that they can make a good compost in this way, and thus save the labor of forking it over. They say if mixing manure with soil in the compost, will make good food for plants; so it will if we mix it in the field. Are we sure of this? By mixing flower, water, and yeast together, we sometimes get good food for the human stomach, but it is not always the case when they are put together.

Perhaps it may be offensive to the taste of some, to compare the kneading dish in the farmer's kitchen, to his compost heap; but they are both labratories, where a chemical process is performed. In the one, to prepare food for the stomach, in the other, for his plants. If to save labor the dough is not properly kneaded, the bread will be poor, and there will be a loss of material; so in harrowing in green manure.

When we mix green manure and soil together, in the compost heap, the temperature is soon raised. This is not the case when it is mixed in the field by harrowing; and it is a long time before it can become proper food for plants.

He who spreads his green manure on the surface, to be mixed with the soil by the harrow, if he succeeds in covering the most of it, generally leaves it in bunches, and in such a situation, that it will not soon decompose. He ought not to complain of his cook if he has a hasty pudding for dinner full of lumps.

If we have warm dry land to plant, we may plough under half of the manure, and spread the remainder, after it has been well composted. If the land is cold, I would recommend to compost it, and spread one half of it, and put the other half in the hill.

### *The proper time for Planting.*

We should be governed more by the state of the land than day of the month. If the land be warm and dry, we may plant the last week in April. As a general rule, from the first of May to the tenth, is the best time to plant.

*The best kind of Corn to plant.*

We have planted many of the different varieties of corn, for a few years past, but have found none that we like so well as that which we have raised the longest. This I think is the case with most farmers; they succeed better with their old variety than with new varieties. Corn is not like the potatoe in this respect. We sometimes get a new variety of potatoe that does well for a few years, and then fails. Not so with Indian corn. Like a true friend, it improves upon long acquaintance. At one time the Baden corn was highly recommended, as it would produce many ears upon a stalk, but when planted as close as we planted, it produced no good ears. There can be no objection to two good ears growing upon one stalk; but, as a general thing, if the nutriment which goes to support the husks and cob of the extra ears, was to go into one good ear, it would be more valuable than two poor ones.

The twelve rowed corn is thought highly of by some; but with us, it does not yield so well as some of the eight rowed varieties; and the cob being large, it does not dry well. We have sometimes planted a white eight rowed kind, which yields well and is very hard and flinty; but it falls down much more than some other kinds, and it does not give so good a color to the milk and butter, when fed to milch cows. As a general rule, that is the best variety which produces the greatest amount of grain in proportion to the stalk and cob.

*Selecting the Seed.*

Preserve the early ears for seed, is what we are often told to do. This may be well, if we raise a large late variety;—but would it not be well to save the best ears for seed, rather than the early ones? I have never seen a very early kind of corn that was very productive.

*The proper distance apart at which to plant.*

If we plant corn without any regard to sowing grass seed among it, three feet and a half apart each way is the proper distance. But if we wish to sow grass seed among it, we had better plant four feet apart; it is better passing through it, when the corn is large and the land is not shaded so much.

When planted this distance apart, we may leave five stalks in each hill.

*The cultivation while growing.*

If the plough and cultivator are used faithfully, but little need be done with the hoe. Since the introduction of the cultivator, many have laid aside the horse plough, but both, I think, ought to be used unless the land is very mellow so that the cultivator will go six inches deep. On a hard wet soil, planted early, the cultivator alone makes but little impression. If we use only the plough it does not break up the lumps. Use the plough first, then let it dry for a few days, then use the cultivator to make the soil fine, then plough again. Afterwards we use only the cultivator or harrow; there is no danger of using either of these too much for the good of the corn.

*Hilling Corn.*

I was taught to make a large, flat, square hill at the first time of hoeing; to raise it some at the second hoeing; at the third or last hoeing to draw all the loose dirt up around the corn, and was told to do this so that the corn might stand up the better. I know not where this idea originated. Perhaps it sprung from the practice of using the stay and corsett to keep the form erect. Experience and common sense alike teach that both will be better off without such support. If all the manure has been put in the hill, it may be necessary to make some hill about the corn to prevent the manure from drying up.

*Cutting the top stalk.*

The wisdom of nature is manifested in the growing corn, by causing the stalk to grow far above the ear. The seed, or pollen, is thus placed in a situation favorable to be wafted by the wind to the silk which is connected with each kernel. As soon as the ear is filled the top of the stalk begins to die, and this would seem to indicate that it might then be removed without much injury to the grain. It is the opinion of some, however, that the corn is injured by this process, more than is gained by the increased value of the fodder.

Perhaps the inquiry may not be out of place here, which is the best way of using the top stalks? To cut and dry them for winter food, or to feed them out green to the stock in September? By refering to the report of the committee on the comparative value of crops as food for cattle, in the transactions for 1848, I find that doubts are expressed as to the value of green corn stalks as food for milch

cows. It is also stated, "that some farmers are of the opinion that the fodder procured from the corn field, will nearly pay for the labor of growing and gathering the crop." Now if corn fodder is worth but little when green, we had better not spend much time in trying to dry it for winter use. So far as my observation goes, having given some attention to the subject, I am fully of the opinion that green corn fodder is one of the best crops that we can raise, for the producing of milk, though it is well known that it will not produce so great a flow of milk as green grass.

Every one, who has been accustomed to milking cows, knows that about the time of cutting English hay, the cows begin to dry up, and that when the feed is good in July, they will gain in flesh, but will not give so much milk as in June. This shows that green grass will make more milk than it will after it has ripened. By the first of August, the feed in most of our pastures begins to fail; the fall feed is not sufficiently grown to afford a supply; we are then without a full supply of green grass, and the question is, what shall we have for a substitute? My answer is, green corn stalks. Those who use their milk for making butter will find that when their cows are well fed with corn stalks, they will not be troubled with white, soft butter, in dog days, which is often said to be owing to the weather, when in fact it was because the cows have not proper food. Another advantage arising from feeding cows with corn stalks at this time is, that they are not so likely to become breachy. Hunger, at this season, impels them to seek for food beyond the fence, and they form habits which are a constant annoyance the year round.

There is one general rule by which we can tell whether a particu lar kind of food has a tendency to produce a great flow of milk or not; that is, by noticing the effect which it has upon the solid excrement of the cow. Green grass produces a great flow of milk and causes the excrement to be soft. Potatoes make the excrement softer than carrots, and produce more milk. Wheat, bran, or shorts make it softer than Indian meal and produce more milk. Green corn stalks make it harder than grass, but softer than English hay. My inference then is, that they are better for making milk than hay, but not so good as grass.

But to return to the question, which is the best way of using the top stalks? They are of more value cut and fed green to our stock, than used in any other way. I know that in September our cows

will live without them; but if the cows are well fed with stalks in the morning before they are put in the field, we can make the grass in the field last much longer, and the cows will do better than they will with a full supply of grass for a few days and then be cut short. Working oxen will do well fed upon green stalks in September. If we wish to fit our oxen for the butcher, there is no way to do it cheaper than by feeding them well with green stalks, in addition to what they get in the pasture.

The fodder which is put in the barn should be used in the early part of winter, for it is then better and is eaten more readily than it is after it becomes thoroughly dry.

*Harvesting.*

When we have a cold season, and the corn is likely to be injured by the frost, it is best to cut it up as soon as it begins to harden, and stook it. In some parts of New England this is the uniform practice. It has some advantage over that of topping the stalks: the fodder is better, it can be removed from the field sooner, and the green and poorer part of it is much better than it is when the top stalks are cut, and it stands exposed to the frost. Many object to this method of harvesting because it makes bad husking. When the corn is small it can be harvested as cheap this way as the other.

Some recommend this way when grass seed has been sown among the corn, as the grass will not be shaded so long. But I prefer to top the stalks, and thus let the sun in upon the grass; if the corn is stooked upon the grass it kills it under the stock, and if it is removed it is a good deal of labor to cart off fifteen tons of green corn, which we sometimes have upon an acre.

It is the usual method of harvesting, where the stalks have been cut, to cut it up at the bottom, and cart it to the barn to husk. But when the corn is large I prefere to break off the ears and carry them to the barn and to get in the fodder when it is dry.

When the corn is housed it should be placed in bins where the air can circulate freely, to prevent its moulding.

After it has been safely housed, it may be proper to inquire as to the best way and time for using it. It is now almost the universal custom to grind it with the cobs for cattle and hogs. This is probably the best way. Does the corn ever possess any more nutriment than it did at the time it was housed? We know that a bushel of

dry corn will weigh more than a bushel of green. This we can account for without supposing it derives nutriment from the atmosphere while drying; corn being more dense than water, as the sap escapes the density increases.

I have thus freely given my views, with the hope that others who handle the plough and hoe will do the same; that by comparing our views, we may learn the best method of cultivating this valuable crop.

*Dr.* *William Sutton, in account with the Essex Agricultural Society.* *Cr.*

| | | | |
|---|---|---|---|
| 1848. | | | |
| Sept. 29. | To balance of former account, | | 563 39 |
| | Amount received of Charles Stetson, | | 100 00 |
| Oct. 3. | Bank Dividends, | | 206 00 |
| Nov. 17. | Amount received of R S. Fay, | | 100 00 |
| 1849. | | | |
| April. | Bank Dividends, | | 201 48 |
| | State Bounty, | | 600 00 |
| Sept. | Amount received of new members, | | 138 00 |
| | Interest on Loans, | | 69 08 |
| | Premiums unclaimed, | | 41 25 |
| | | | $2022 20 |

| | | | |
|---|---|---|---|
| 1848. | | | |
| Sept. and Oct. | By amount of Premiums and Gratuities awarded by Trustees, | | $738 25 |
| | By Expense account, as follows: | | |
| | Exhibition, 1848, | 179 10 | |
| | Secretary's Salary, | 50 00 | |
| | Printing, | 194 92 | |
| | 6 vol. Skinner's Journal, | 12 00 | |
| | Postage, | 18 96 | |
| | Meetings of Trustees, | 3 00 | |
| | | | 457 98 |
| 1849. | | | |
| Sept. | By balance on hand, | | 825 97 |
| | | | $2022 20 |

## FUNDS BELONGING TO THE SOCIETY.

| | | | | |
|---|---|---|---|---|
| 16 | shares in Warren Bank, | cost, | 1596 00 | Notes receivable, 1318 59 |
| 12 | do Exchange | " par | 800 00 | Cash on hand, as above, 825 97 |
| 22 | do Commercial | " cost | 1471 66 | |
| 7 | do Mercantile | " par | 700 00 | Funds, 1849, 8983 47 |
| 6 | do Merchants' | " par | 300 00 | " 1848, 8720 89 |
| 5 | do Village | " par | 500 00 | |
| 3 | do Salem | " par | 300 00 | Increase, $262 58 |
| 12 | do Danvers | " cost | 1171 25 | |

SALEM, Sept. 26th, 1849.

WILLIAM SUTTON, Treasurer.

SALEM, Dec. 22, 1849. We certify that we have examined the foregoing account, and find the same correctly cast and well vouched.

ASAHEL HUNTINGTON, ROB'T. S. DANIELS. } Auditors.

# OFFICERS OF THE SOCIETY.

CHOSEN SEPTEMBER 27, 1849.

JOHN W. PROCTOR, of Danvers, *President.*
DANIEL ADAMS, Newbury,
ASA T. NEWHALL, Lynnfield,
DANIEL P. KING, Danvers,
RICHARD S. FAY, Lynn,
} *Vice Presidents.*
WILLIAM SUTTON, Salem, *Treasurer.*
ALLEN W. DODGE, Hamilton, *Secretary.*

## HONORARY TRUSTEES.

| | | | |
|---|---|---|---|
| Frederick Howes, | Salem. | James H. Duncan, | Haverhill. |
| Ebenezer Mosely, | Newburyport. | | |

## TRUSTEES.

| | | | |
|---|---|---|---|
| Lewis Allen, | Danvers. | Royal A. Merriam, | Topsfield. |
| John Alley, 3d, | Lynn. | Wingate Merrill, | Danvers. |
| Jacob Brown, | Ipswich. | E. R. Mudge, | Lynn. |
| David S. Caldwell, | Newbury. | Moses Newell, | West Newbury. |
| David Choate, | Essex. | Josiah Newhall, | Lynnfield, |
| Jeremiah Coleman, | Newburyport. | Andrew Nichols, | Danvers. |
| Andrew Dodge, | Wenham. | Thomas E. Payson, | Rowley. |
| George Hood, | Lynn. | Gardner B. Perry, | Bradford. |
| Joseph How, | Methuen. | Benjamin Porter, | Danvers. |
| John M. Ives, | Salem. | Dean Robinson, | West Newbury. |
| Josiah Little, | Newbury. | James Stevens, | Andover. |
| Josiah Kimball, | Boxford. | John Stone, Jr., | Marblehead. |
| Joseph Kitredge, | Andover. | Horace Ware, Jr., | Salem. |
| Elisha Mack, | Salem. | Richard P. Waters, | Beverly. |

## MEMBERS ADMITTED IN 1849.

| | | | |
|---|---|---|---|
| Kendall Osborn, | Danvers. | Paul T. Winkley, | Newbury. |
| Seth Holden, | do. | Rufus Pray, | d0 |
| Charles P. Preston, | do. | William Merriil, | W. Newbury. |
| James P. King, | do. | B. F. S. Griffin, | do. |
| William R. Putnam, | do. | Daniel Merrill, 2d, | Methuen. |
| Joseph Akerman, | Newburyport. | Simeon L. Wilson, | do. |
| Henry Frothingham, | do. | Israel F. Tappan, | Manchester. |
| James C. Colman, | do. | Benjamin Tappan, | do. |
| William Batchelder, | Andover. | J. F. C. Hayes, | Lawrence. |
| Benjamin Rogers, | do. | Nathan W. Harmon, | do. |
| Peter Smith, | do. | E. B. Little, | Haverhill. |
| Henry Poor, | do. | Thomas J. Clark, | Salisbury. |
| Joseph Andrews, | Salem. | Benjamin C. Putnam, | Wenham. |
| Hazen Ayers, | do. | Hiram L. Newhall. | Lynnfield. |
| Gardner Barton, | do. | Charles L. Flint, | Roxbury. |
| Zachariah Cole, | Beverly. | James M. Parker, | Boston. |
| Joseph Lunt, | Newbury. | | |

## MEMBERS HERETOFORE ADMITTED, WHOSE NAMES WERE OMITTED IN THE CATALOGUE.

| | | | |
|---|---|---|---|
| Amos Tappan, | Newburyport. | William Sargent, | Newbury. |
| Richard Adams, | Newbury. | Joseph Perkins, | do. |
| John. J. Adams, | do. | Joshua Tappan. | do. |
| Moses Pettingill, | do. | | |

# LIST OF PREMIUMS AND GRATUITIES
## AWARDED IN 1849.

### PLOUGHING — DOUBLE TEAMS.

| | | |
|---|---|---|
| Daniel Putnam, Danvers, | 1st premium, | $10 00 |
| John Washburn, Lynn, | 2d do. | 8 00 |
| Richard S. Bray, Newbury, | 3d do. | 6 00 |
| Franklin Alley, Marblehead, | 4th do. | 4 00 |

### PLOUGHING — SINGLE TEAMS.

| | | |
|---|---|---|
| Hobart Clark, Andover, | 1st premium, | 8 00 |
| Benjamin P. Ware, Marblehead, | 2d do. | 6 00 |
| Elijah Pope, Danvers, | 3d do. | 4 00 |
| Henry Poor, Andover, | 4th do. | 2 00 |

### PLOUGHING — HORSE TEAMS.

| | | |
|---|---|---|
| William G. Brown, Ipswich, | 1st premium, | 8 00 |
| Joseph Whittredge, Hamilton, | 2d do. | 6 00 |
| John Dorr, Ipswich, | 3d do. | 4 00 |

### WORKING OXEN.

| | | |
|---|---|---|
| Jonathan Berry, Middleton, | 1st premium, | 10 00 |
| William Foster, Andover, | 2d do. | 8 00 |
| John Washburn, Lynn, | 3d do. | 6 00 |
| William Sutton, Salem, | 4th do. | 4 00 |

### FAT CATTLE.

| | | |
|---|---|---|
| James A. Putnam, Danvers, | 1st premium, | 10 00 |
| Richard Knights, Newbury, | 2d do. | 8 00 |
| Joseph Kittredge, Andover, | 3d do. | 5 00 |

BULLS.

| | | |
|---|---|---|
| Henry Poor, Andover, | 1st premium, | 7 00 |
| Samuel Thompson, Haverhill, | 2d do. | 6 00 |
| Joseph Kittredge, Andover, | 3d do. | 5 00 |

MILCH COWS.

| | | |
|---|---|---|
| Wingate Merrill, Danvers, | 2d premium, | 9 00 |
| Enoch Page, Danvers, | 3d do. | 8 00 |
| Frederic Burnham, Manchester, | 4th do. | 7 00 |

HEIFERS IN MILK.

| | | |
|---|---|---|
| Hiram L. Roberts, Beverly, | 1st premium, | 7 00 |
| Richard Hawkes, Saugus, | 2d do. | 6 00 |
| Stephen Whittemore, Jr., Salem, | 3d do. | 5 00 |

HEIFERS, TWO YEARS OLD.

| | | |
|---|---|---|
| A. B. Lord, Beverly, | 1st premium, | 5 00 |
| J. T. Haskell, Beverly, | 2d do. | 4 00 |
| Isaac Standley, Beverly, | 3d do. | 3 00 |

YEARLING HEIFERS.

| | | |
|---|---|---|
| Benjamin Kidder, Saugus, | 1st premium, | 4 00 |
| John Stone, Jr., Marblehead, | 2d do. | 3 00 |
| John Reynolds, Andover, | 3d do. | 2 00 |

STEERS, TWO YEARS OLD.

| | | |
|---|---|---|
| David S. Caldwell, Byfield, | 1st premium, | 6 00 |
| Jedediah H. Barker, Andover, | 2d do. | 4 00 |

YEARLING STEERS.

| | | |
|---|---|---|
| Joshua Goodridge, Salem, | 1st premium, | 4 00 |
| Moses Pettingill, Topsfield, | 2d do. | 3 00 |

COLTS.

| | | |
|---|---|---|
| Rufus Pray, Newbury, | 1st premium, | 10 00 |
| Bailey Loring, Andover, | 2d do. | 8 00 |
| Nathaniel Boardman, Danvers, | 3d do. | 6 00 |
| Samuel Tucker, Hamilton, | 4th do. | 4 00 |

SWINE.

| | | |
|---|---|---|
| William G. Lake, Topsfield, | 1st premium, | 5 00 |

| | | |
|---|---|---|
| Joseph Kittredge, Andover, | 2d premium, | 3 00 |
| Hiram L. Newhall, Lynnfield, | 1st do. | 5 00 |
| " " " | 1st do. | 6 00 |
| Thomas G. Dodge, Newburyport, | 1st do. | 4 00 |
| John Stone, Jr., Marblehead, | 2d do. | 2 00 |

## SHEEP.

| | | |
|---|---|---|
| Joseph Kittredge, Andover, | 1st premium, | 7 00 |

## JUNE BUTTER.

| | | |
|---|---|---|
| Nathaniel Felton, Danvers, | 1st premium, | 10 00 |
| John Preston, Danvers, | 2d do. | 8 00 |
| Elijah Pope, Danvers, | 3d do. | 6 00 |

## SEPTEMBER BUTTER.

| | | |
|---|---|---|
| Charles P. Preston, Danvers, | 1st premium, | 10 00 |
| Jonathan Berry, Middleton, | 2d do. | 8 00 |
| Nathaniel Felton, Danvers, | 3d do. | 6 00 |

## CHEESE.

| | | |
|---|---|---|
| David Choate, Essex, | 1st premium, | 8 00 |

## AGRICULTURAL IMPLEMENTS.

| | | |
|---|---|---|
| Parker & White, Boston, | gratuity, | 6 00 |
| Ruggles, Nourse & Mason, Boston, | do. | 3 00 |
| Francis Burnham, Manchester, | do. | 2 00 |
| Samuel D. Tilton, Salem, | do. | 1 00 |
| David Ames, Boscawen, N. H., | do. | 3 00 |
| William Chase, Salem, | do. | 2 00 |

## MANAGEMENT OF FARMS.

| | | |
|---|---|---|
| Joseph F. Ingalls, Methuen, | gratuity, | 15 00 |
| Jonathan Merrill, Methuen, | do. | 10 00 |
| Daniel Merrill, 2d, Methuen, | do. | 10 00 |
| Simeon L. Wilson, Methuen, | do. | 10 00 |

## ORCHARDS.

| | | |
|---|---|---|
| Daniel Adams, Newbury, | 1st premium, | 10 00 |

## GRAIN CROPS.

| | | |
|---|---|---|
| Henry Poor, Andover, | 1st premium, | 8 00 |
| " " " | gratuity, | 6 00 |
| John Noyes, Newbury, | 1st premium, | 8 00 |
| Joshua Foss, Byfield, | 1st do. | 8 00 |

## ROOT CROP.

| | | |
|---|---|---|
| Francis Dodge, Danvers, | 1st premium, | 6 00 |

## AGRICULTURAL ESSAYS.

| | |
|---|---|
| Charles Lewis Flint, West Roxbury, | 10 00 |
| William R. Putnam, Danvers, | 10 00 |

| | | | |
|---|---|---|---|
| By the Committee on | | Poultry, | 21 00 |
| do. | do. | Fruits, | 35 00 |
| do. | do. | Vegetables, | 13 00 |
| do. | do. | Flowers, | 15 62 |
| do. | do. | Rugs, Carpets, and Counterpanes, | 28 00 |
| do. | do. | Cloth and Hosiery, | 8 25 |
| do. | do. | Metallic and Fancy Articles, | 36 00 |
| do. | do. | Leather, and Articles of Leather, | 12 00 |
| | Total, | | $627 87 |

ALLEN W. DODGE, Secretary.

Hamilton, Dec. 31, 1849.

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The List of Premiums offered for 1850, will be found in the printed show bills. It is nearly similar to that of former years.

The Exhibition of the Society will be held at Salem, on THURSDAY, the 26th day of September next.

# ESSEX AGRICULTURAL SOCIETY.

## LIBRARY REGULATIONS.

1. Each member shall be entitled to take from the Library *two volumes*, on signing a receipt for the same, and agreeing to be accountable therefor.

2. No member shall keep any book more than two weeks, after being notified (by the Librarian) that the same is wanted by another member.

3. All books belonging to the Library, shall be returned on or before the 15th of November, in each year; that the same may be examined and the condition of the Library reported to the Trustees.

4. Any member who shall neglect or refuse, to conform to these Regulations, shall thereby forfeit the privilege of taking books from the Library.

NOTE.—All who have paid the ininiatory fee of three dollars towards the funds of the Society; all who have received certificates of membership by order of the Trustees; and all ordained ministers of the gospel, resident within the County, are considered as members.

A

# CATALOGUE OF BOOKS

BELONGING TO THE

# ESSEX AGRICULTURAL SOCIETY.

## THE COLMAN LIBRARY.

| | Vols. |
|---|---|
| Adams's Medical and Agricultural Register, | 1 |
| do Philosophy, | 5 |
| Aelbroeck's Flemish Agriculture, in French, | 1 |
| Agriculture of Flanders, | 1 |
| do Nova Scotia, | 1 |
| do Pennsylvania, | 6 |
| Agricultural Prize Essays, Scotland, | 3 |
| do Protection Society's Tracts, | 1 |
| do Repository, London, | 2 |
| do Scrap Book, | 1 |
| do Tracts, in cloth, | 8 |
| do do in Russia, | 3 |
| Acton's Treatise on Dairies, | 1 |
| Alcott's Housekeeper, | 1 |
| Albany Cultivator, 1834-5, | 1 |
| Allen on the Grape Vine, | 1 |
| Arator, Essays, &c., by Taylor, | 1 |
| Armstrong's Agriculture, and others, | 1 |
| Bailly's Maison Rustique, | 4 |
| Bakewell's Geology, | 1 |
| Banfield's Agriculture on the Rhine, | 1 |
| Bard's Shepherds' Guide, | 1 |
| Barnum's Farmer's Own Book, | 1 |

| | Vols. |
|---|---|
| Barry on Sheep, two copies, | 2 |
| Baxter's Agricultural and Horticultural Annual, | 1 |
| do Library of Agr. and Horticultural Knowledge, | 1 |
| Beecher's Domestic Economy, | 1 |
| Beet Sugar, Notes on, | 1 |
| Bigelow's Plants of Boston, | 1 |
| Blacker on Small Farms, | 1 |
| Blumenback's Physiology, | 1 |
| Bordley's Husbandry, | 1 |
| Boswell's Poultry Yard, | 1 |
| Boussingault's Rural Economy, | 1 |
| Brisbane on Association, | 1 |
| British Farmer's Magazine, | 11 |
| do do do in 20 Nos. | 5 |
| do Husbandry, | 1 |
| Brown's American Forest Trees, | 1 |
| do Naturalist, | 2 |
| do Rural Affairs, | 2 |
| Brown on Shoeing Horses, | 1 |
| Buel's Farmer's Companion, | 1 |
| do do Instructor, | 2 |
| Carpenter's Systamatic Education, | 2 |
| Chaptal's Agricultural Chemistry, two copies, | 2 |
| Child on Beet Sugar, | 1 |
| Clatter's Cattle Doctor, | 1 |
| Cobb on Mulberry Trees, | 1 |
| Cobb's Silk Manual, three copies, | 3 |
| Cobbett's Cottager, &c., | 1 |
| do Letters from France, | 1 |
| do Ride in do | 1 |
| do Rural Rides, | 1 |
| do Treatise on Corn, | 1 |
| Colman's Addresses, | 1 |
| do Agriculture of Massachusetts, | 2 |
| do Sermons, | 1 |
| Colton's Western Tourist, | 1 |
| Combe's Constitution of Man, | 1 |
| do Digestion, &c.. | 1 |

| | Vols. |
|---|---|
| Combe's Health and Mental Education, | 1 |
| do Mental Derangement, | 1 |
| do Moral Philosophy, | 1 |
| do Phrenology, | 1 |
| do Popular Education, | 1 |
| Complete Grazier, | 1 |
| Comstock on Silk Culture, | 1 |
| Comstock's Chemistry, | 1 |
| Cornaro on Health, | 1 |
| Cully on Live Stock, | 1 |
| Curwen's Hints, | 1 |
| Dana's Muck Manual, | 1 |
| Daubenton's Care of Sheep, | 1 |
| Daubeny's Lectures on Agriculture, | 1 |
| Davy's Agricultural Chemistry, 2 copys, | 2 |
| Dean's N. E. Farmer, | 1 |
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| | Vols. |
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| Essex Agricultural Society's Transactions, | 2 |
| Farmers' Almanac, 1844–5–6, | 3 |
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| do Cyclopædia, by Johnson, | 1 |
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| Fessenden's Poetical Farmer and Silk Manual, | 2 |
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|---|---|
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|---|---|
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| do do Institute, 1846, | 1 |
| do N. Y. State Agricuit'l Society, 1846, | 1 |
| The Sportsman's Magazine, 1826, | 1 |

# INDEX.


Mr. Newhall's Address, - - - - 3 to 17
Report on Dairy Products, - - - - - 17 to 28
Statement of John Stone, Jr., - - - - - 28 to 29
" Daniel Putnam, - - - 29 to 30
" Elijah Pope, - - - - 30 to 31
" Charles P. Preston, - - - 31
" George Pearson, - - - - 32
" Nathaniel Felton, - - - 32 to 34
" Jonathan Berry, - - - - 34
" Duncan McKaughton, - - - 35
" John Preston, - - - - 36
" Nathan D. Hawks, - - - 36
" David Choate, - - - - 37
" A neighbor, - - - 38 to 41
Report on Ploughing—Double Teams, - - - - 41 to 42
Letter on Bartlett's Double Plough, - - - 42 to 44
Report on Ploughing—Single Teams. - - - - 44 to 46
" " Horse Teams, - - - 46
" Domestic Manufactures, - - - 47 to 50
" Cloth and Hosiery, - - - 50
" Leather, and Articles therefrom, - - - 50 to 51
" Fancy Articles, - - - 51 to 58
" Fruits, - - - - 58 to 60
" Vegetables, - - - - 60 to 61
" Flowers, - - - - - 61 to 64
" Fat Cattle, - - - - 64
" Working Oxen, - - - - 64 to 65
" Bulls, - - - - 65 to 67
Statement of Henry Poor, - - - - - 67
Report on Milch Cows, - - - - 68
Statement of Wingate Merrill, - - - - 68 to 69
" Enoch Page, - - - 69
" Frederic Burnham, - - - 69 to 70
Report on Heifers, - - - - 70
Statement of Hiram L. Roberts, - - - 70 to 71
Report on Steers, - - - - 71
" Colts, - - - - - 72 to 75
" Swine, - - - - 75
Letter of Lewis Allen, on Raising Swine, - - - 75 to 77
Report on Sheep, - - - - 77
" Fattening Cattle and Swine, - - - 77 to 78
" Comparative value of Crops, &c., - - 78 to 81
" Fruit Trees, - - - - 81 to 82
Statement of Daniel Adams, - - - - 82 to 84
Report on Improved Agricultural Implements, - - - 84 to 86
E. H. Derby on the Cultivation of Potatoes, - - 86 to 89
Report on Farms, - - - - - 89 to 95
Statement of J. F. Ingalls, - - - 95 to 97
" Jonathan Merrill, - - - - 97 to 99
" Daniel Merrill, 2d, - - - 99 to 100
" Simeon L. Wilson, - - - 100 to 106
Report on Root Crops, - - - - 106 to 114
Letter of J. W. Proctor, on Crops of the Season, - - 114 to 116
Statement of Francis Dodge, - - - 116 to 117
Report on Poultry, - - - - - 117 to 127
" Grain Crops, - - - - 127 to 129
Statement of Henry Poor, - - - - 129 to 130
" John Noyes, - - - - 130
" Daniel Osborn, - - - - 131
" Joshua Foss, - - - 131 to 132
" Henry Poor, - - - - 132 to 133
" Daniel Putnam, - - - 133 to 135

Report on Compost Manures, - - - - 135 to 137
" the State Bull, - 137 to 130
Letter of Samuel Jaques, Esq., on Polled Cattle, - - - 139 to 144
Notice of Rev. Henry Colman, - - - 141 to 146
Report on Essays, - - - - - 145 to 140
Essay on the Origin and History of Indian Corn. - - 147 to 162
" " Culture of " " - - - 161 to 173
Treasurer's Statement, - - - - 173
Officers of the Society, - - - - 174
Members admitted in 1849, - - - 174
Premiums awarded in 1949, - - - - 175 to 178
Catalogue of Library, &c., - - - - 179 to 191
Index. - - - - - 192 to 193

# TRANSACTIONS

OF

# THE ESSEX

# AGRICULTURAL SOCIETY,

FOR 1850.

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PUBLISHED BY ORDER OF THE SOCIETY.

DECEMBER, 1850.

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# ADDRESS.

## BY CALEB CUSHING.

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*Mr. President and Gentlemen of the*
*Essex Agricultural Society:—*

It would be presumptuous on my part, to think of addressing you on matters of practical agriculture. I choose rather to invoke your indulgence for some appropriate reflections of another class.

Allow me, however, in the outset, whilst congratulating you on the happy reunion here of so many members of the Society, to give utterance to a common grief, in view of the absence of one, who, honored and esteemed by the community at large, was more especially dear to you, both as an associate and as a friend. I allude, of course, to your deceased Vice President, the Hon. Daniel P. King.

I have known Mr. King well as a public man, and in that respect can speak of him with the precision of personal observation. As a statesman, indeed, his memory now belongs not to our own Commonwealth only, but to the whole Union.

He owed to the accidents of birth and of circumstances but this,—that he was enabled to pass into the public service without going through that apprenticeship in active life, or training in the learned professions, which, though it sharpen the faculties, and enlarge the sphere of knowledge, yet has a tendency to leave the heart hardened in the conflict of human passions and interests, and the mind sophisticated by the habit of seeking for arguments to maintain an assumed opinion or side, in the stead of the unprejudiced exploration of the depths of supreme and eternal truth.

In this, he was favored by fortune : the rest was all his own :—

opportunities of education and mental formation faithfully improved,—scholarly accomplishments,—a graceful and ready eloquence,—courteous bearing,—candor of judgment,—a spirit manly and generous,—firmness of tenet, softened by moderation of temperament,—justness of principle,—philanthropy in sentiment and practice not in loud profession,—religion of the heart as well as of the head and of the outward life,—equableness of general worth,—constancy and uprightness in the performance of all his duties, whether to himself, his country, or his God.

Add to which, that, in him, conscientiousness of political conviction was free of that bigotry of party, which in the narrowness of its myopic perception looks on a difference of sentiment as a crime; and his earnestness of execution in the line of his convictions was unaccompanied by that common form of party action, a calculated and self-interested intolerance.

Thus it was, that he rose to, and well discharged, public functions of high eminence, first in the domestic government of the Commonwealth, and afterwards for a series of years as one of her Representatives in the Congress of the United States. His premature death, in the vigor of his age and of his faculties, has cut short the career of a wise, good, and patriotic man, who, had he been longer spared to us, would have continued to win true glory in the honorable service of his country.

Of the private virtues of Mr. King as distinguished from those qualities which have marked his political life,—of the excellence of his character as a son, a husband, a father, a fellow-citizen,—it would be unbecoming for me to speak in the mere cold terms of public eulogy, here, in the midst of those, by whom his memory is cherished, and his death deplored, for considerations higher, and more sacred, than all of respect or of admiration, which gathers around the name of the departed statesman.

But Mr. King was a farmer, also, with a strong predilection for agricultural pursuits, showing by the successful management of his own ample estates, how science may be combined with practical skill; and in that, his professional and official relation to you, justly earning the confidence and esteem of the Society.

Gentlemen, there is, in my estimation, no condition of private life more useful to the community, or more honorable to the individual, than the cultivation of the earth. I propose, in continuation, to develope this idea, and to exhibit the relations of land, its ownership, and its cultivation, to the material wealth of nations, to their moral and political welfare, and especially to the prosperity and happiness of these United States.

It is impossible that any American should call to mind the history of his country, and look abroad on its present condition, without feeling a sentiment of exultation in the remembrance of the one, and of pride in the contemplation of the other.

It may be, that something of exaggeration enters into the sentiment, it may be that the frequent expression of it has a sound of boastfulness to the foreign ear; yet, as Mr. Everett truly and well observes, the feeling and the manifestation of it have been most natural to us of this generation, who saw eminent men of the revolutionary struggle still lingering among us after the nation had already grown into surpassing greatness, thus prolonging our heroic age even into the present time.

This feeling is the more natural, inasmuch as we ourselves are the witnesses of a visible, yet marvellous national growth; of populous cities, filled with monuments of art, which have sprung up as it were by enchantment from the bare face of the wilderness, with the suddenness, but without the transientness, of one of the vast oriental encampments; of great states, with their thronging millions of inhabitants, appearing in wide lands, where the first furrow was ploughed in the virgin soil by the hands of our very fathers; nay, of an empire, broader than Macedonian king or Roman general ever ruled, rising out of the earth as if at the stamp of our feet.

We see that it is not an empire only, but a people, standing before us, colossal, glorious, sublime in its supernal majesty, with the aureola of divinity flashing from its brow. For that people has the highest of the patents of nobility to show for itself, as the Spaniard phrases it, namely, its works; it has taken its knightly spurs on the field; it has gained its blazon of arms in

the council-chamber; it is the child of its own achievements. And in thus learning to become great, it has learned the harder lesson to be great; for whilst other nations are struggling in vain to establish free institutions, wildly tossing their limbs in the throes and convulsions of mingled hope and fear, only to sink down again into the death-like torpor of despair, we, on the contrary, led forward by those great men among us, whose solid minds are alike unshaken, whether by the "vultus instantis tyranni" or by the "civium ardor prava jubentium," have, amidst difficulties unexampled, held on our course in conscious strength, proudly dashing behind us the troubled waters of discontent and disunion.

Well, therefore, in such a time as this, might republican France look with admiration at the spectacle of the regular working of the institutions of this country, when the conqueror of many a well-fought and hard-won field of battle bowed his head at last before the great conqueror, death, and the supreme power of the Union passed, in tranquillity and peace, to the hands of one, having indeed just titles to respect, but not of a name so identified with great events, as to make the heart throb and the blood run thrilling through the veins, like his predecessor, and not therefore equally sure of the spontaneous deference of his countrymen.

And well, therefore, may we say, to the American Union, in the exquisite words of one of the sons of Essex :—

> Hope of the world! May each omen of ill
> Fade in the light of thy destiny still!
> Time bring but increase and honor to thee,
> Land of the beautiful, land of the free!

Nevertheless, it may be right for us to inquire, how much of all these grand results, of this rapid growth in power, of this happy combination of liberty with order, and of the organic perfection of our political system, is due to men, their race, character, spirit, institutions, and how much to other causes above or beyond all human influences, and what those causes are.

Gentlemen, we hear much in these latter days of the Anglo-Saxons, as if it were their blood in us, which makes or explains the greatness of the United States.

Now, I am prepared to concede all its due influence to this the Teutonic element in our composition; but no more. I cannot shut my eyes to the action of the Celtic races, Spanish, French, and Irish, on the condition of America.

The characteristic of the Anglo-Saxon stock is individualism:—in the man, reliance on self, exclusive regard for self, personal independence, love of liberty, as it is indefinitely called among us, by which we mean, love of individual power; in the society, separate dwellings, collection into small political groups or communities, quick spread over the surface of a given country, occupation of land.

But in men, as in things, each specific quality excludes its opposite. Therefore, in the Anglo-Saxon, with self-reliance and self-regard, comes disregard of the rights and feelings of others, as illustrated in that habitual violation of contracts among us, which is more or less sanctioned by law and by what is called public sentiment.

Love of personal independence and individual power is, of of itself, a complete dissolvent of society. Therefore, again, among the Anglo-Saxons, or wherever that element exists largely, the central power is weak, authority is diffused among the parts, government is carried on, or checked and controlled in its action, by voluntary associations, clubs, and political parties, which tyrannize in their own way.

In religion, protestantism takes the place of catholicity, that is, unity of church disappears, and there follows infinite subdivision into fragmentary sects, which every where profess, but nowhere tolerate, freedom of belief.

In respect to industrial pursuits, as each man is for himself, with freedom of labor there is also freedom of capital; and as the employed rejects or imperfectly admits the idea of obligation to the employer, so also the employer feels imperfectly the sense of obligation towards the employed; and while there is much talk of liberty, there is comparatively little thought of either equality or fraternity; and the dissolution of co-relation, thought it involve bankruptcies and adulteration of commodities in one class, with pauperism and depredations on property in the other, and frequent hostility between both, yet comes to be deemed the sum of human happiness.

His passion is to occupy land; but in the indulgence of it he is carried away by individualism, and so he takes wherever he can, without punctilious regard for the rights of property in others; and, as he is in temper unsocial and repellent towards other races, he exterminates or expels the previous occupants.

In a word, among Anglo-Saxons, the federative principle obtains; the centrifugal force is stronger than the centripetal; and the society perpetually tends towards anarchy and dissolution.

Accordingly, there was no such thing as permanent and well ordered general government among the Anglo-Saxons, until the Norman-French conquered England, and infused into the society a portion of the Celtic elements of cohesion by mutual relation or co-dependence, and centralization of political authority. Then, and not until then, did Britain become a power in Europe.

Now, is it because of the Anglo-Saxon blood and character of the primitive settlers of these United States, as manifested in their political tendencies and in their religion, that these United States became and have continued to be a great people?

I reply, no: race and blood, with inherited instincts or habits belonging to them, determined the quality, not the fact, of greatness. The proof of which is, that the Spaniards, a Celtic race, with a genius the opposite of the Teutonic, with centralization of political ideas, co-dependence of social habits, and catholic unity of religion, yet in less time than the English, and with greater obstacles to overcome, established a more magnificent empire in America.

It required but one hundred years for the Spaniards to bind together the two continents in one powerful state, extending from ocean to ocean, and from Sante Fe in the North to Valdivia in the South, through seventy-five degrees of latitude; to establish definite and equitable relations between the conquerors and the conquered; to christianise the latter; to create in all that vast region rich seaports of maritime commerce; to build up refined and populous interior cities; to organize productive industrial enterprises on the largest and most profitable scale; to construct edifices and establishments of religion, government, military defence, education, and philanthropy,

such as to this day exist nowhere else in America. It needs only to compare what Spain did in America in the sixteenth century with what England did in the seventeenth, and to contrast the condition of Spanish America in the year 1600, with that of British America in the year 1700, to dispel the common delusion among us, which, from partial views and a pardonable national vanity, assumes our superior and peculiar intrinsic aptitude for colonization and for empire.

Whoever examines carefully the history and condition of the Western and Northwestern States, and sees how, at a time when the English still timidly clung to the Atlantic sea-coast, and, owing to their repellent qualities of race, were perpetually at war with the Indians, at that very time the French, on the other hand, had implanted their ideas, their authority, their language, and their religion, among the numerous and powerful tribes of the West, from Canada all around to Louisiana,— whoever, I say, considers this, will be inclined to think, that it was not any particular line of policy, nor any wide-reaching ideas, nor any intrinsic superiority of blood, on the part of the Colonies themselves, but the contingencies of a war in Europe, which decided the question, whether the predominant influences in North America should be English or French, Teutonic or Celtic.

We, in New-England, have been accustomed to take a still more contracted view of the question, and to over-estimate the influence exercised by the peculiar ideas of the Puritans in the colonization of America: unjust in this to the Hollanders of New-York, to the Huguenots of Carolina, to the Catholics of Maryland, to the Cavaliers of Virginia, and to the Irish in all parts of the United States. That religion was not the pivotal fact in the successful colonization of the United States may be plainly seen by the rapid growth, in our day, of the Australian Colonies, which, though unable to boast of any exemplary purity in religion or morality, have yet advanced faster in population and production than did the Anglo-American Colonies.

What, then, is the explanation of the rise, greatness, wealth, prosperity, freedom, and stability, of the United States? I have

no hesitation in saying, that, in my opinion, the main-spring of all this is land. The abundance of land has been the primary fact in the advancement of Spanish America, Portuguese America, French America, and British America, as it has in that of Australia.

I lay down the following series of propositions, in elucidation of the subject :—

1. The possession and utilization of land are the natural foundations of all society, because, without land, and its productions, life is difficult and precarious, if not impossible. In the position thus broadly stated are included, of course, the natural products, whether vegetable, animal, or mineral, of the air and water as well as the earth.

2. Manufacture, which is the modification of these products, and commerce, which is their distribution by exchange, are secondary in order of time and of necessity to the occupation of the earth, which alone furnishes dwelling-place and food, the prime exigencies of life, and which also furnishes the objects of manufacture and commerce.

3. In all societies, land is the chief conservative element of the society, of its institutions whatever they may be, and of its particular spirit and moral identity. Whether the government be aristocratical as in Great Britain, or democratical as in the United States, its distinctive quality is more particularly prominent in the agricultural interest.

Hence it is that the great empire of the East, whose robust identity of type has defied all the chances of time, proof alike against external violence and internal corruption for thousands of years,—I mean China,—has the unshaken basis of its greatness laid in agriculture, universally recognized by its sages and its statesmen as the noblest of their ancestral arts, the palladium of public stability, the inexhaustible source of national prosperity, second in estimation to the cultivation of the mind alone : in testimony of which it is, that the one great occasion of the year, on which the ruler of three hundred millions of men descends from that solitary elevation of his, which is half the throne of a sovereign and half the shrine of a demigod, to mingle in person with his people, is a solemn agricultural

pomp, when he himself guides the plough in the furrow as an example and a sign to the universe.

4. Whatever may be the political name of a government, it is monarchical in spirit and fact, if the land be held chiefly or in great part by the sovereign, as in Egypt, Russia, or India; it is aristocratic, if it be held in large estates by individuals, as in Great Britain or Hungary; it is democratic, if it be extensively distributed among the people for cultivation, as in France or the United States.

5. A political society will be stable, or otherwise, according to the predominance in its composition and control of those interests, which are directly associated with the earth and the natural productions of land or sea, or of those which consist only in the modification or distribution of natural productions.

Accordingly, countries, like Egypt, India, China, whose primary interest is agriculture, seem to possess indestructible vitality. Persians, Greeks, Romans, Arabs, Turks, have, by successive waves of invasion, broken down the monuments of art in Egypt, but not her prosperity; Mongols and Manchus have expended their lust of plunder on the fertile soil of China in vain; Tartars and English have in like manner labored unsuccessfully to exhaust the wealth of India: for if Man be powerful to waste and destroy, Nature is yet more powerful to renovate and repair.

6. The tendency of agriculture is to distribute men over the country at large, of manufactures and commerce to accumulate them in great masses on given points. Of course, in the former will be found the traits of more simple habits, of a healthier state of the moral and physical man, and of less mobility of ideas and character: whilst in the latter will be more civilization of mind and body, but less vigor and individuality of stamp; more accomplishment in the fine arts, but less virtue; more new ideas, but less of reliable ones; emotions evanescent, though vivid; movement, change, instability.

7. If, in a political society, which is wholly or in chief part agricultural, the community be divided into two classes, one owners of the soil and the other mere laborers, whether that state of things result from conquest, as of England by the Nor-

mans, and of Ireland by the English, or from the introduction of laborers foreign or of another race, as in our Southern States and the West Indies,—then, one of two things happens: Either the owners and laborers are legally independent of each other, and associated only by the contract of hire, in which case pauperism is rife;—or the two classes are mutually co-dependent, in which case there is no pauperism, but, to compensate for this, the laborers are in the condition either of vassalage or servitude.

In all the known, or at least in all the existent, forms of political society, this is the terrible alternative, attending unequal distribution of property, namely, either serfdom, or pauperism. And the great question of the day in Europe is, whether there be any middle term;—whether it be possible so to reconstitute society, that the rights of capital and labor may be reconciled, and that, with the employer free to engage the employed or not as he pleases, and the employed free to engage with the employer or not as he pleases, still the employed shall at all times have work at a price adequate for his subsistence. That is a social problem not yet experimentally solved.

8. In proportion as productive land is abundant, and easy of acquisition by all the members of the community, will society be sound on the main point, that is, the absence either of serfdom, or of pauperism, and of the criminal classes created by the unequal distribution of limited national wealth. If, in that profusion of productive land, there be nothing to check the natural progress of population, or it be supplied by colonization, then will there be a rapid growth of the country in power. If the land be all taken up, if it be deficient in quantity, if manufacturing and commercial interests have overgrown the agricultural, then is the condition of the country abnormal; and the continuance of its prosperity is dependent on circumstances foreign to itself, and beyond its control; and the accidents of political change may at any moment produce its decline or downfall.

In saying this, let me not be understood to speak in disparagement of manufacture and commerce, those hand-maidens of agriculture; but only as attributing to each that which is,

in my estimation, its everlasting place in the great scheme of human affairs, and in the welfare of nations.

The higher comparative estimation, in which land has been held by some of the great states of ancient and modern times, such as Egypt, Lacedæmon, Rome, and feudal Europe, has not been, as many have erroneously supposed, a mere prejudice of class, but the expression of a sentiment or conviction in favor of what they deemed the material element of their greatness and the safeguard of their nationality. The old political communities, whose industry was more exclusively manufacturing or commercial, as Tyre, Carthage, Athens, Palmyra, each with its narrow territory and its massed civic population, shone for a brief season with unsurpassed and dazzling brilliancy in wealth, learning, and art, and then passed away like the blaze of a meteor, which leaves only the reflection of its transient lustre upon the page of history, and peradventure some half-buried monumental stones to mark its resting place on earth. Florence, Pisa, Genoa, Holland, are examples of more modern date. Britain is no exception to this great political law; for, though she be pre-eminent in manufacture and commerce, yet the ruling class there is rooted in the land; it repairs to the city in the pursuit of power and of pleasure, but its rich abodes, its household gods, the birth-place and nurture of its children, the graves of its progenitors and itself, are in the country; and when the earth of England shall have ceased to produce for her its corn, its coal, and its iron, and the landed interest be no longer potential in her government, then for her also it will need but the accident of a battle to decide her fate.

Gentlemen, applying these propositions to the main question, I say, these United States are, *as a whole*, and always have been, chiefly dependent for their wealth and power on the natural productions of the earth. It is the spontaneous products of our forests, our mines, and our seas, and the cultivated products of our soil, which have made, and continue to make, us what we are. Manufacture can but modify these, commerce only distribute or accumulate them, and exchange them for others, to gratify taste or promote convenience. Land is the footstool of our power; land is the throne of our empire.

Generation after generation may give themselves up to slaughter in civil or foreign war; dynasty follow dynasty, each with new varieties of oppression or misrule; the fratricidal rage of domestic factions rend the entrails of their common country; temples, and basilica, and capitols, crumble to dust; proud navies melt into the yeast of the sea; and all that Art fitfully does to perpetuate itself, disappear like the phantasm of a troubled dream; but Nature is everlasting; and, above the wreck and uproar of our vain devices and childish tumults, the tutelary stars continue to sparkle upon us from their distant spheres; the sun to pour out his vivifying rays of light and heat over the earth; the elements to dissolve in grateful rain; the majestic river to roll on his fertilizing waters unceasingly; and the ungrudging soil to yield up the plenteousness of its harvest year after year to the hand of the husbandman.

He, the husbandman, is the servant of those divine elements of earth and air; he is the minister of that gracious, that benign, that bounteous, that fostering, that nourishing, that renovating, that inexhaustible, that adorable Nature; and as such, the stewardship of our nationality is in him.

God has in all times vouchsafed to our country ministers of religion, whose hearts and whose life were touched as with holy fire from his altar; soldiers, of whom the very name sounds in the mind's ear as a trumpet-call to battle and victory; statesmen, the glory of whose eloquence, whose wisdom, whose patriotism, will descend to future ages, obscuring in the effulgence of its light all Greek and Roman fame. God has made us of that Anglo-Saxon race, which Tacitus commemorates of old, as inclined to shun the crowded city, and to choose its abodes by the sparkling fountain, or along the green glades, or in the solemn depths of the forest; whose passion is land; whose individualism, whose genius of separation and self-action, whose rural tendencies, render it especially apt for that period in the career of a political community, when land is super-abundant with it, and when the uncultivated earth is to be reclaimed to the dominion of man. God has endowed us with courage, energy, activity, genius, invention, industry, love of knowledge, improvement, and virtue, at least equal to

those of the most favored members of the human family. God has blessed and protected us in our efforts to establish and maintain wise and good institutions of government, and has enabled us to defend them against all enemies, alike on the ocean and the land. But God in his great mercy has also given us a country, geographically speaking, without the singular features and situation of which, all the wisdom, virtue, and sacrifices of our fathers and ourselves would but have served, like those of Swedish Charles,

To point a moral, and adorn a tale;

and without which the specific qualities of our parent-stock, their instincts of personal independence, severance of interests, diffusion of authority, repellence of race, exaggerated self-confidence of judgment, intolerance of any opinion, tastes or habits differing from their own, and their very avidity for land, would all have proved to be the elements of dissolution and destruction, rather than of wealth and power.

We of the United States possess a portion of the earth, in which all the natural sources of wealth, mineral or vegetable, abound; which constitutes (approximately) the whole of the temperate zone of this Continent, and is therefore highly congenial to animal life; which by the configuration of the sea-coast abounds in harbors; which contains interior seas; and whose superficies is so disposed, with numerous moderate elevations, with no conglomeration of lofty mountains, but with extensive gently inclined planes, that it contains a larger system of rivers, and a greater proportion of tillable lands, than any other country in the world, except possibly Russia and China.

Compare, for illustration, with the condition of the American Republic in this respect, the contrary state of things in the Mexican. Such is the configuration of the coast of Mexico that she has almost no good harbor on the Atlantic ocean. Vera Cruz is but a road-stead along the sea-beach, imperfectly sheltered by a reef of rocks. You cannot reach the interior of the country, and the seats of its natural resources and power, from either sea-coast, without ascending to a height of seven thousand feet in a line of one hundred miles, and the whole

surface of the earth is a confused mass of mountains. Of course, navigable rivers, canals, and railways, either to connect together the interior parts of the country, or to connect them with the sea, are impossible. Of course, also, the relative proportion of arable land is much less than it is in this country. Moreover, as the climate is dry, and the running streams few and small, therefore, of the land in general only those portions can be cultivated profitably, which are susceptible of irrigation. If God had cast the lot of our fathers in that part of America, not ours would be the mighty ships, which now bear our flag, and the fame of our greatness, and the rich productions of our soil, our fisheries, our work-shops, and our looms, to the uttermost bounds of the earth ;—not ours, the floating palaces of the Hudson, the Delaware, the Ohio, and the Mississippi ;—not ours the wonders of mechanic art in the use of the steam engine ;—not ours, the iron bands of so many railroads, which seem as if intended to bind together indissolubly the East and the West, the North and the South ;—not ours the great forests and vast prairies of the West, which invite and satisfy the expansive energies of our race, which draw off the superfluity of our population, which constitute the safety-valve for all the pent-up passions and explosive or subversive tendencies of an advanced society, and which in the asylum and aliment they afford to the discontented or unhappy of other lands, are serving to hurry us on to the very pinnacle of earthly power.

As, therefore, we are great, wealthy, prosperous, and powerful, so are we, despite of transitory conflicts of interest, peaceful and secure in our political relations, because of land, more land, exuberance of land. The Anglo-Saxon must have room in space, and his own way in opinion. The colonists of Massachusetts-Bay had spread themselves over half the surface of the State, at a time, when their aggregate number did not exceed the present population of one of our smaller cities ; and how little of dissent, either religious or political, they tolerated, we know well here in Salem. The people of the English Colonies felt crowded on the eastern slope of the Alleghanies, and, though most of the land was yet untrodden wilderness, they could not find space among them in which to suffer the

residence of a few broken bands of Indians. After the establishment of the Federal Union, they swarmed over to the western slope of the Alleghanies. They were not satisfied there, until they had obtained Louisiana, and occupied the entire Mississippi Valley. And still, with their strong instincts of expansion, but not of assimilation, they drove before them the surviving remnants of the Indians. There was more land yet ahead of them, and they pushed on to Texas, Oregon, New Mexico and California.

Where is all this to end? I will not undertake to foreknow; but I see that the continual occupation of new lands, and successive acquisitions of territory, are the manifestations and the effect of the particular genius and personal character of the people of the United States. We satisfy in this the inborn exigencies of our nature, just as when we eat or drink. Give scope for the free action of our characteristic national qualities of activity, expansibility, individualism, love of land,—and all is well: check it, stop it, shut it up, force it back on itself, and you will discover that the letter of a written Constitution is quite secondary in its agency on the integrity and peace of the American Union.

Gentlemen, we of the State of Massachusetts, unlike the United States as a whole, have reached that point in our social career, where agriculture is overtaken, and perhaps passed, by manufacture and commerce. That is one of the critical periods in the life of a community. Far be it from me to say any thing, here or elsewhere, to discourage the ardor of our advancement in mechanic art, in manufacture, or in commerce. Nor, on the other hand, do these need to be stimulated by applause; for their weak side is a tendency to hurtful excess of production by means of machinery and of credit. But the interests of the agriculture of Massachusetts do need to be stimulated by public exhortation.

Let those of us, then, who feel stifled in the air of over-full cities, to whom the fresh breezes of the country, its green fields, its fair hills and bright streams, its woods and its lakes, and its ripened promise of the harvest, are never-ceasingly dear,—let us turn with fonder affection to all there is left to

man of the charms of Eden. We may fail thus to get something of city graces: we shall keep the more of country strength. Let us hold fast to the sheet-anchor and stay of nations. Let science be applied to augment the productiveness and value of the agricultural lands of the Commonwealth, as its population increases, and other interests attain great relative weight: to which end, the State should be called on to establish an Agricultural School worthy of her wealth and fame. If our soil will not produce, nor the climate ripen, those great staples which supply our foreign trade, cotton, tobacco, sugar, wheat, rice, yet other products of the earth are not wanting here, as the means and the subject of agricultural industry and prosperity. Let it never be forgotten that agriculture is the conservative element in our social system, under whatever name of party that interest may for the time being appear. Finally, if we should ever incline to doubt as to the relation of agriculture to life, to the character of men, and to the destiny of nations, let us look back on the history of our country, and remember how many of its greatest generals, like Washington, Jackson, Taylor,—how many of its greatest statesmen, like Jefferson, Madison, Calhoun,—to say nothing of living men,—have been the production and growth of rural life, and have clung, with invincible tenacity, amid all the changes and chances of the loftiest flights of greatness, to the pursuits and the interests of their mother-earth.

# REPORTS, &c.

## INTRODUCTORY REMARKS.

The Cattle Show and Fair, by the Essex Agricultural Society, was holden at Salem, on the 26th of September. A north-east storm operated much inconvenience in the movements of the day. The number of spectators was much less than it otherwise would have been;—but enough to indicate the strong interest felt by the public in the objects of the Society. The show of animals was equal to that of any former year;—notwithstanding the unfavorable circumstances under which they were viewed, the general remark was, that this part of the Exhibition was well sustained. The ploughing match came off at the hour appointed, more than twenty teams engaging in the contest, no competitor, it is believed, being deterred by the inclemency of the weather, from appearing on the field, and completing his work. The entire performance was highly creditable to the skill and perseverance of those engaged. Most of the ploughs used were of the description that have been best approved, for several years, in the County of Essex. A plough of new pattern, called the Michigan Sod Plough, turning two furrows, one upon the other, was exhibited, and operated favorably. Judging from the slight examination in our power to give it, it appeared to be worthy of further experiment. If we do not mistake, it will be found, for many purposes, a highly useful implement.

The display of articles of domestic manufacture was not as large as on some former occasions; probably diminished by

the state of the weather, and by the requisition found necessary, of entry being made on the day previous. The plan of charging a small admission fee, answered the purpose intended, by keeping the rooms in a condition to accommodate those who wished to see and examine what was exhibited. It will unquestionably be found a salutary regulation, in fair weather, with a numerous attendance.

The show of fruit was very fine, superior to any before seen in this County. For the success in this department, the Society are under great obligations to our Horticultural friends in Salem, the exhibition by the Essex Institute being united with that of this Society.

For an examination of the animals and articles presented, and the premiums and gratuities awarded, reference may be had to the reports of the several committees;—which do or should contain a complete specification of all presented, and all awarded, together with the reasons of the award;—that those who read may have as full an understanding of the awards, as those who saw the objects for which they were made. It cannot be expected that committees will view with the eyes of competitors;—if they did, it would be a hopeless task to expect any awards. Disinterested as committees are always required to be, and selected for their special qualifications for the purpose, it is desirable that they shall continue to command, as they have heretofore received, the confidence of the public;—and especially of the farmers whose interests they are anxious to promote.

The premiums awarded are but a small part of the objects of the Society. The information elicited and disseminated is the grand purpose of the organization. This is done through the medium of the Reports. It cannot therefore be too strongly impressed on the minds of competitors and committees, that on the fullness and accuracy of their statements and reports, will mainly depend the usefulness and reputation of the Society. In regard to some of the objects upon which reports are to be made, it is not easy to say any thing new;—nevertheless, if worth examining at all, they are worthy of description. "Line upon line, and precept upon precept," will be found to make salutary impressions in agriculture as well as in morals.

An increased interest has been given to the annual meetings of the Society, for several years, by the presence of distinguished gentlemen from other Counties. Such an interchange of civilities is worthy of encouragement, and may be the means of much improvement. Within the year, more than forty have been added to the list of members. When the facts are taken into view, that there are many towns in the County, from which no additions have been made for the last twenty years;—and that those who were then members have now passed their period of active labor, and that the population of these towns in the mean time has nearly doubled: it must be apparent, that there are many, who would find their account, in uniting their efforts, for the advancement of a cause, admitted by all, to be the basis of public prosperity. Much pains have been taken to establish a library, for the use of the members, which is accessible to all, and from which much good is anticipated. The time is gone by, when book knowledge is to be viewed as of no value. Books contain the essence of all that is valuable in knowledge. And he that has the skill to use them to advantage is likely to be most wise. This is particularly true of an employment that spreads itself in such an infinite variety of ramifications as the cultivation of the soil. So true is it that he who learns most in relation thereto, sees most to be learned.

It is to be hoped that the plan in contemplation for maturing a system of agricultural instruction will receive some definite form in the course of the present year. When this is done, the farmers of Essex should not be unmindful of their rights and interest in this matter.

The Committee, of whom were present J. Osgood Loring, of Andover, Eben G. Berry, of Danvers and Andrew Mansfield, Jr., of Lynnfield, make the following Report:

Nine cows were offered for premium,—two of them had calves by their side, but no statement being given with them, they were not entitled to a premium. They were both of them fine looking cows, and one of them, belonging to Seth Kimball, of Bradford, gave strong proof of her good qualities by the justice she had done to three fine looking calves, which stood by her side, and which were born at one birth. The cow presented by John Nichols, of Salem, was a superior milker, but had been kept higher than the other cows offered for premium. His statement exhibited an example of accuracy and regularity rarely to be met with, her yield of milk in pounds, being given as recorded at each milking for sixteen months past.

After a careful examination of the cows, together with the statements accompanying them, the committee were satisfied that they were all more than common animals.

We recommend that there be awarded to,—

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| Farnham Spofford, of Andover, first premium, - | $10 00 |
| Stephen Driver, of Salem, second premium, - - | 9 00 |
| Josiah Crosby, of Andover, third premium, - | 8 00 |
| Eben King, of Danvers, fourth premium, - - | 7 00 |

It is painful to reflect, that though our own society has now been in operation over thirty years, and though premiums have been regularly offered from the beginning for the best milch cows, yet it is not known that any considerable permanent improvement has been made in the county, if even attempted. Accidental cases of superior cows have indeed happened, a few spasmodic efforts have been made to improve the breeds, and our Transactions have teemed with annual reports, drawn up with much ability, yet who has ever heard of any thing like general results? Where is the Col. Jaques of Essex county? Where is our Cream-pot breed of cows, some of which, in Middlesex, "produce nine pounds of butter in three days, on grass feed only?" where shall we find the dairy, in which the

cream of many cows united, "produces more than 80 per cent of pure butter," the process of churning "being performed in one minute," nay, "in forty seconds"!

After so direct an allusion to the splendid experiments of Col. Jaques, of Charlestown, it may not be improper to bring a few facts relating to those experiments once more before the people, and especially before the Society. They are too apt to be forgotten—and yet they ought not to be forgotten or lost sight of. That distinguished, enthusiastic breeder, (every one who means to do much must have some enthusiasm,) no sooner turned his attention to the subject, than he perceived that no reliance could be put upon accidental cases of superior cows, however superior they might be. They would begin to fall back in the second generation, and be often, and indeed generally, miserable in the third. "A good cow may have a bad calf," said the spelling book of our boyhood, and every one knows that the descendant of a good cow of no particular breed, may inherit the inferior properties only, of some near or remote ancestor. And especially when it is considered that too many are satisfied to take any and every miserable runt of a bull, it is plain that nothing could be effected in the matter of improving stock in this way. Col. Jaques heard of a noble sized cow, raised in Groton, Mass., the first owner of which knew nothing of her origin. Before coming into the hands of Col. Jaques, she was owned a while in Dorchester by a Mr. Haskins. Her cream was of such extraordinary richness that, according to Mr. Colman, it would often separate into butter by the motion of the carriage while carrying it into Boston. The whole of that remarkable breed of cows, called the Cream-pot breed, and whose products have been hinted at above, descended from this native Groton cow, by a cross with the improved Durham short horned bull Cœlebs, imported some years since, and owned afterwards by Col. Jaques. This breed of cows had reached the third generation in 1838, since which time I have not known their history.

But the facts here recited go to show conclusively, that by a judicious choice of the bull, our native breed of cows can be made to do all that cows ought to do, or ever have done any

where ; while the present condition of the cows of our county, at least, proves as clearly that without attention, great attention, to the bull, nothing effectual can ever be done at improving stock. What were the results of the Charlestown experiment, made at the Colonel's Ten Hills stock farm? "I have forty cows and heifers," says he, "ten bulls and bull calves of different grades of this cream-pot breed, all raised by myself. I keep my bulls, selected as breeders, until I have proof of the quality of their offspring. My old cream-pot bull is ten years old. My Don cream-pot, from which I am now breeding with some of my cows and heifers, is three years old."

Extraordinary native cows are not wanting in every town, which can often be purchased reasonably, for making a beginning. Thus, to go no further, a few of those cited by the late lamented Mr. Colman, may be mentioned to show that they can easily be found ;—one single cow being sufficient to begin with, as was the case in the grand experiment above referred to. The cow of Mr. Colt, of Pittsfield, produced 193 lbs. of butter in 148 days, and that from 1st December to 27th April ! Mr. Campbell's cow, (same town,) yielded 26 beer quarts of milk per day, and Mr. Hosea Merrill's 30 beer quarts. A four year old cow of Mr. Calvin Davis's produced 225 pounds of butter in 172 days, and fatted a calf, in the year 1838. Mr. Wm. Dewey's two cows averaged for a time 14 lbs. of butter each per week, and so did Dr. Hyde's, of Stockbridge. A cow of Mr. Thomas Hodge's, in North Adams, produced 425 lbs. of butter in one year, 400 lbs. of it being made in nine months.

This list of good cows, confined indeed to Berkshire, might be lengthened almost indefinitely, both from the published and unpublished accounts. I am merely showing that there is ample opportunity to make a beginning in improvement. Never mind the pedigree : I would not undervalue it indeed, if reliable, but there is something bordering upon the ludicrous in such an array as the following, found in the Abstract of the Returns of Agricultural Societies for 1845, page 196. "Waterloo was sired by 'Bruce ;' Bruce by Wellington ; Wellington was sired by Sandy senior, who was bred by Mr. Paton, of Swinlees, who was never beaten. He got the first prize at Dundonold, when 14 years old. John Young."

Imposing as all this is, I should much prefer the simple story of Samuel Jaques, our own country-man, whose experiments every man of us may in effect, repeat.

It is a serious question for the Society to settle, whether they really do the good they intend, by the present method. Some think it would even be better to offer the premium for each farmer's whole stock of cows, than, as at present, for the petted one. It would be fairer no doubt. But suppose a standing offer were made to all who should repeat the experiment of Col. Jaques, with such variations as were unavoidable. Suppose a premium of $15 were offered to all who would begin with one cow now making 12 to 14 lbs. of butter, or even 10 to 12 lbs. a week, and who should drive her to some superior bull, and all her progeny for five years to come should be reared, the obviously faulty ones excepted, Would not the effort be made, and could it fail of promoting one grand object of the Society, viz: the improvement of our stock of milch cows?

How important an animal is the cow! Into how many articles of food does her milk enter! That stomach has departed fearfully from the simplicity of nature, that cannot bear milk; and yet many say they cannot bear it. Of its medical effects, it is not proposed to speak, further than to say, that one physician of eminence has remarked that it is of more value in consumptions than the whole Materia Medica, and that for persons in health, it is often better unboiled than boiled.

But for food simply, almost any thing could be spared better than milk in some of its forms. How then does it become every farmer to increase the quantity, and improve the quality. It is but lately that the attention of cow keepers has been distinctly called to the subject of kind treatment of milch cows. The reports of Mr. Payson, Mr. Caldwell, and others, have done great good in this respect. Keep this, too, before the people. It is not necessary exactly, that the cow should be separated from our parlor by a glass door only, as Mr. Payson informs us is the case in Holland. But personal attention and kind treatment she should have. So too, a warm barn, and yet not the stived and sickly underground stables where the cows are often kept in London, where they rarely if ever

breathe pure air, and are often found with tubercles in their lungs. Pure air is indispensable, even if it cannot be had without being cold. Let them be kept dry, and prevent all accumulations of dungy matter upon their hips. But cows should not be curried severely—an animal of a thin skin dreads a heavy carding exceedingly. But by using a stiff brush only, in many cases, the glossy smoothness may be secured, and the skin left without being scratched. This should be used however only where the hair is thin. The skin should be reached and invigorated every day with something, effectually but mildly. Should neat cattle have their food at three feedings in twenty-four hours, or should they have little at a time and often? The latter will answer, where we can be sure of giving it often. But I incline from observation, to favor the idea of three feedings daily. First ascertain how much they need, and keep to that, varying it only with the weather, giving more in cold than in warm weather. It is objected that they will blow upon it and leave it. This is most apt to be the case with oxen just out of the yoke,—and by the by, it is an excellent custom with many to put nothing before oxen till they have time to cool and get quiet. Cows and all neat cattle may become as regular to their three meals as swine do, and thrive as well. When at liberty in good feed, they take a full meal and then lie down; this, nature teaches, and nature may be as safely followed in the winter as in the summer.

I do not attempt to give the "marks" by which a good cow may be known. These marks conflict too much, and fail too often. If any one wishes to enter vigorously upon such a plan as has been hinted at above, a few cows can always be found in every town, and can be purchased. They may cost more than poor ones, and they ought to. But the keeping costs no more, while the prospect of improvement must be enhanced immeasurably.

The chairman of the committee on milch cows is alone responsible for the views contained in the foregoing report; but he is happy to add a few remarks communicated by Mr. Bodwell, of Methuen, a member of the committee, in answer to a request for his views on the subject; a request was also for-

warded to the other members of the committee, but from them nothing has been received. "I am of opinion," says Mr. Bodwell, "that our native breed, if proper attention is paid to its improvement, is quite as good as the foreign, or better, taking into consideration the expense of keeping. I think that much more attention should be paid to improve our native breed of cows." Mr. Bodwell does not seem to have conceived the idea particularly of experimenting in the manner I have recommended, but agrees fully that our breed may be greatly improved, by merely raising the best calves, and paying more attention to the keeping.

DAVID CHOATE, CHAIRMAN.

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FARNHAM SPOFFORD'S STATEMENT.

I offer for premium my cow, called the "Green Mountain." She is 7 years old, and is about one-sixteenth Durham, the other part is of native breed. She calved on the 9th of June. We commenced keeping an account of her milk on the night of the 18th of June. Last 11 3-4 days of June she yielded four hundred and ninety-five pounds of milk, 495 8 oz.

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|---|---|---|
| July - - - - - - - - - | 1376 | |
| August - - - - - - - | 1402 | 15 oz. |
| Sept. 1 to 24th, inclusive - - - - | 1060 | |
| | 4,334 | 7 |

The last 11 3-4 days of June she yielded 24 1-4 lbs. of butter, (we have milked her three times a day through the season.) The greatest yield in any one day was two pounds and nine oz. Greatest yield of milk any one day was fifty-two pounds and ten oz. In July the yield of butter was only fifty lbs., the weather being unfavorable, and feed being short. In August, commencing on the 18th and continuing one week, she made 14 lbs. and 11 oz. butter; during 13 days in September she yielded 25 1-4 lbs. butter.

This cow had no other feed than a common pasture, until

the first day of August, she was then turned into fall feed, but had nothing additional given her.

Andover, Sept. 25, 1850.

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STEPHEN DRIVER'S STATEMENT.

My cow "Helen," entered for premium, is six years old, and of native breed. I have owned her for more than two years past. Last year she was dried March 3d and calved March 28th. For some weeks after her calf was taken from her, and before she went to pasture, she gave 18 1-2 quarts of milk per day, by actual measurement, and in September following she averaged about 9 quarts per day.

This present season she went dry four weeks, and calved March 21st. The week before she went to pasture, she yielded 9 lbs. 14 oz. of superior butter, besides 29 quarts of milk sold and used in the family. Her feed was good; English hay, and six quarts of shorts per day. During the summer she has run in the common pasture. She has given quite as large a quantity of milk this year, as the last. Yesterday she gave seven and a half quarts.

Salem, Nov. 26, 1850.

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JOSIAH CROSBY'S STATEMENT.

I enter for premium to-day, my 4 year old heifer, of Durham and Ayrshire breed. She has had two calves. She dropped her last, about the last of March. During the month of June last, she gave, while running in a good pasture, an average of 16 quarts of milk per day. She has frequently given 17 and 18 quarts per day, and the quality is quite equal to the quantity.

North Andover, Sept. 20, 1850.

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EBEN KING'S STATEMENT.

The cow I offer for premium is eight years old, of native

breed. I bought her in the state of Maine, two years ago next October. She was giving then, on grass feed, eleven quarts of Milk per day. She calved the April previous. After being put up to hay, she gave nine quarts of milk per day, in December and January; after that she gradually gave less until April. About six weeks previous to her calving, she gave six quarts per day; when I began to dry her. I found it very difficult to do so, and put her on meadow hay keeping. She calved the 25th of May, 1849. After her calf was killed, I often measured her milk, and she gave fourteen quarts per day through the best of the season. In the fall she gave from nine to eleven quarts per day, varying according to the feed. In December and January last she gave nine quarts per day, after that time she gradually gave less. In May and June she gave six quarts per day. One month before she calved she was giving four quarts per day, when I left off milking her. She calved the 18th of August last, and gave from six to eight quarts per day more than her calf would take. The calf was killed when he was four weeks old; since then her milk has been weighed, and she averages thirty-six pounds per day. Her keeping has been pasture feed through the warm season; in the winter hay, with occasionally a few carrots. I have sold the most of her milk, having made butter but a small part of the time since I owned her. Her milk is of the first quality, and makes the best of butter.

Danvers, Sept. 15, 1850.

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JOHN NICHOLS'S STATEMENT.

I offer for premium my red cow, seven years old. Her feed in winter has been English hay, a part of the time Eastern pressed; since April 20th second crop, with a large bucket of shorts and beets, night and morning. In the summer of 1849, her feed was grass in gallows hill pasture, with shorts and hay at night. After September 1st she had good fall feed, without water in the field—watered night and morning only. Each of the pastures was a mile and a half from home.

In 1850 she has been pastured in a field of about one acre, near home; she has also had a peck or more of shorts with hay daily, after the grass was short. The pasture generally poor. The milk is of the first quality. She calved April 29, 1849—calf with her 11 1-2 days. Calved again March 7, 1850—calf with her 32 1-2 days. Annexed is a record of the quantity of milk in pounds given at each milking. I have allowed the same quantity each day while the calf was with her, that she averaged the week after.

From this record it will appear that in the sixteen months milking time previous to this date, she has given 15,250 lbs. of milk, or 6,100 quarts.

Of this I have sold and used 1274 quarts, at 6 cts. per quart, for - - - - - - - - - - $76 44

And 4826 quarts, at 5 cts. per quart, - - - 241 30

Total, - - - - - - - - $317 74

For her feed in the same time, I have paid - 104 74

Leaving a profit of - - - - - $213 00

Her average yield for sixteen months milking time was twelve and one-half quarts.

Salem, Sept. 26, 1850.

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THOMAS G. DODGE'S STATEMENT.

The cow offered by me for premium is of the Ayrshire breed and was seven years old last spring. For the past three years she has not been dry. She calved this year, July 27th, and her calf was sold at four weeks old. About seven weeks before she calved she began to increase her milk until she gave eight quarts per day till she calved. She has given eleven quarts per day on an average.

Newburyport, Sept 25, 1850.

## ON HEIFERS.

The Committee report that they have performed the duty assigned them, under very unfavorable circumstances, it raining during their examination, which prevented their giving the heifers that minute inspection which they would have been glad to have done. Twenty-three heifers were entered for premium, and three for exhibition. Of these, three were three years old, nine two years, and fourteen yearlings. There was quite a number of heifers, other than those to which the premiums were awarded, which were large and noble looking animals, principally of a foreign or cross with a foreign breed, which the committee think much better adapted to the plough than the dairy; their milking properties not being equal, in the opinion of the committee, to some of our best improved native breeds. Some of the heifers to which premiums were awarded, were unaccompanied with satisfactory statements, otherwise they might have been ranked differently in the list of premiums.

After a full consultation, the committee came to the following decision, and recommend that the premiums be awarded accordingly.

HEIFERS IN MILK.

| | |
|---|---|
| To Philip L. Osborn, of Danvers, first premium, | $7 00 |
| " Daniel Osborn, " " second premium, | 6 00 |
| " Henry Hone, of Saugus, third premium, - | 5 00 |

HEIFERS TWO YEARS OLD.

| | |
|---|---|
| To Sylvester Cummings, of Danvers, first premium, | 5 00 |
| " Eben Hathorne, of Salem, second premium, | 4 00 |
| " John Stone, Jr., of Marblehead, third premium, | 3 00 |

YEARLING HEIFERS.

| | |
|---|---|
| To John S. Hubbard, of Newbury, first premium, | $5 00 |
| " Jesse Dame, of Rowley, second premium, | 3 00 |
| " George French, of Andover, third premium, | 2 00 |

ANDREW DODGE, Chairman.

DANIEL OSBORN'S STATEMENT.

I offer for premium my no horned Heifer. She is three years old ; her calf was taken from her the 25th of May, since that time she has given from thirty to forty pounds, or from twelve to sixteen quarts of milk per day, allowing two and one half pounds to the quart. Her keeping has been common pasturing, without grain of any kind.

Danvers, Sept. 26, 1850.

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PHILIP L. OSBORN'S STATEMENT.

I offer for premium my two year old heifer in milk. She calved the middle of May last. In June and July she gave on an average twelve quarts per day, and in August nine quarts a day. Nine quarts of her milk made a pound of butter. Her feed has been a common pasture.

Danvers, Sept. 26, 1850.

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SYLVESTER CUMMINGS' STATEMENT.

I offer for inspection and premium my two year old heifer. She calved July 9th, and the calf remained with her till August 8th. The product of her milk from this last date to September 8th, was five hundred and twenty-five pounds. At the present time it is seventeen and one-half pounds per day. Twenty pounds of her milk yielded one pound of butter. Her keeping through the season has been good pasturing, without any extra feed. The pasture to which she was driven, is three fourths of a mile from home.

North Danvers, Sept. 25, 1850.

## ON WORKING OXEN.

The Committee,—present Jedediah H. Barker, of Andover, Seth Kimball, Bradford, Hiram L. Newhall, Lynnfield, William G. Brown, Ipswich, and Jervis Lamson, Hamilton, having attended to their duty, would Report: that in performing it, it is difficult to do justice to all, as so many oxen are to be tried, and the time is so short for the examination. The load, used for this purpose, was about two tons, exclusive of the wagon, which for most of the cattle was not a heavy load, and therefore there was but little whipping.

The rules of the society require that working oxen entered for premium should be over four and under eight years of age. When the question is asked by the Committee, how old are your oxen, the answer is such as the driver sees fit to give, and whether correct or not, it is for the committee to judge. In one instance a pair of cattle were stated to be six years old, when the committee were of opinion that they were nine or ten. If the rule as to age is retained by the society, it is desirable that some more certain mode should be prescribed for determining it, such as the written certificate of the owner.

The oxen exhibited this day were many of them of a good size, looked very well, and performed their work well also, while others were not well matched.

The number of entries was twenty-six, fifteen pairs only were on the ground for trial, as follows:

| | | | | |
|---|---|---|---|---|
| One pair by | Richard S. Bray, | Newbury, | aged | five years. |
| " " | Moses Pettingill, | Topsfield, | " | six " |
| " " | Elijah Pope, | Danvers, | " | five " |
| " " | Jonathan Berry, | Middleton, | " | five " |
| " " | David S. Caldwell, | Byfield, | " | five " |
| " " | William A. Lander, | Danvers, | " | seven " |
| " " | John Washburn, | Lynn, | " | seven " |
| " " | John Washburn, | Lynn, | " | five " |
| " " | Franklin Alley, | Marblehead, | " | seven " |
| " " | William Foster, | Andover, | " | five " |
| " " | Elias Clough, | Lynn, | " | six " |
| " " | John Newhall, | " | " | six " |

One pair by Isaac Standley, Beverly, aged five years.
" " George P. Wilkins, Middleton, " five "
" " B. W. Crownshield, Topsfield, " five "

The Committeee have agreed to award the premiums as follows:

To Richard S. Bray, of Newbury, first premium, $10 00
" John Washburn, Lynn, (7 years old) second premium, 8 00
" Jonathan Berry, Middleton, third premium, 6 00
" Isaac Standley, Beverly, fourth premium, 4 00

The Committee would remark, that a pair belonging to William Foster, of Andover, were worthy of a premium, but not the first. Having taken the second premium the last year, they were, by the rules of the society, cut off the present year from the same or a smaller one.

JEDEDIAH H. BARKER, Chairman.

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## ON STEERS.

The Committee Report, there were three pairs of three years old, one pair of two years old, and four pairs of yearling steers exhibited, and they have awarded the following premiums:

THREE YEARS OLD STEERS.

To Jedediah H. Barker, of Andover, first premium, $7 00
" David S. Caldwell, of Byfield, second premium, 6 00

TWO YEARS OLD STEERS.

To Moses Pettingill, of Topsfield, second premium, $4 00

YEARLING STEERS.

To Seth Kimball, of Bradford, first premium, $4 00
" David S. Caldwell, of Byfield, second premium, 3 00

James Day, of Bradford, presented a yearling steer of extraordinary size, and your committee recommend a gratuity of $2 to Mr. Day. For the Committee,

J. KITTREDGE.

## ON BULLS.

Seven bulls were presented for premium, and the committee have unanimously awarded the premiums as follows:

To J. G. Walcott, of Danvers, for his two year old native bull, first premium, - - - - $7 00

To Joseph Kittredge, of Andover, for his two year old Devon bull, second premium, - - - - 6 00

To David Lake, of Topsfield, for his three year old half Ayrshire bull, third premium, - - - 5 00

For the Committee, SOLOMON LOW.

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## ON FAT CATTLE.

The Committee on Fat Cattle, having attended to the duties assigned them, would respectfully Report:

There were only three entries for premium, one by Jesse Sheldon, of Beverly, one fat heifer; one by Daniel Low, of Essex, one pair of fat oxen, six years old, weighing three thousand, six hundred pounds; one by Jedediah Farnham, of Andover, two pair oxen, one pair weighing three thousand eight hundred and ninety-five pounds, the other pair three thousand six hundred and sixty-five pounds.

There were two other pairs on exhibition, by Joseph Leavitt, of Salem, very fine cattle, but as they were not entered for a premium, this passing notice is all we can express.

On examination, your committee could find no person to show or describe but the four cattle belonging to Mr. Farnham, of Andover, one pair of which we did not think came up to the requirements of the Society's rules. The other pair, on the other hand, were a fine pair of cattle, and fully entitled to consideration. We therefore award to Mr. Farnham, for his best ox, the first premium, - - - $10 00

And the second premium for his mate, - 8 00

For the Committee, WINGATE MERRILL.

## ON MARES AND COLTS.

The Committee on Mares and Colts, would respectfully report, that seven mares and twenty-six colts were entered for premium.

The exhibition was considered by the committee the best ever offered in Essex county. Many of the animals were deserving of premiums, had a larger number been at the disposal of the committee. After fully examining each one, they with much difficulty award the following premiums, viz :

To Dean Robinson, of West Newbury, for the best breeding mare, the premium, - - - $10 00

To Jos. Kittredge, of Andover, for the best four year old colt, the premium, - - - - $10 00

To Ezra Dodge, of Wenham, for the best three year old colt, the premium, - - - - 8 00

To Israel Trask, of Beverly, for the best two year old colt, the premium, - - - - - 6 00

To Moses L. Atkinson, of Methuen, for the best one year old colt, the premium, - - - - 4 00

WILLIAM OSBORN,
HORACE KIMBALL,
ELIJAH POPE,
SAML. C. PITMAN,
J. COLMAN.

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## ON SWINE.

The Committee on Swine having attended to the duties assigned to them, Report :

The whole number of Swine entered for premium was twenty-seven, viz : by A. W. Dodge, of Hamilton, six weaned pigs four months and twenty-eight days old.

John Smith, of Hamilton, a breeding sow and her litter of six weaned pigs.

Abel Burnham, of Gloucester, one boar, four months and ten days old.

Seth Kimball, of Bradford, Suffolk boar, six months old.

Wm. G. Lake, of Topsfield, a breeding sow nine months old, Suffolk breed.

Henry Poor, of Andover, five pigs three months 9 days old, one-half Suffolk breed.

Josiah Crosby, of Andover, one Suffolk boar, one do breeding sow and four pigs.

The Committee would award the premiums as follows:

To Seth Kimball, of Bradford, for his Suffolk boar, first premium, - - - - - $5 00

To Josiah Crosby, of North Andover, for his Suffolk boar, second premium, - - - - 3 00

To John Smith, of Hamilton, for the best breeding sow, native breed, first premium, - - - $5 00

To William G. Lake, of Topsfield, second premium, 3 00

To John Smith, of Hamilton, for the best litter of weaned pigs, first premium, - - - - 6 00

To Allen W. Dodge, of Hamilton, second premium, 3 00

To Abel Burnham, of Gloucester, for the best weaned pig, first premium, - - - - 4 00

To Henry Poor, of Andover, second premium, - 2 00

For the Committee, AARON DODGE.

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## ON SHEEP.

The Committee Report that two entries were made, both of which, they consider good specimens, and entitled to premiums.

The first premium, of $7 00, they recommend be awarded to Joseph Kittredge, of North Andover, for his sheep, consisting of pure South Downs, half blood and Leicester cross.

The second premium, of $5 00, they recommend be awarded to Dean Robinson, of West Newbury, for his full blood South Down sheep.

For the Committee, JOSIAH LITTLE.

## ON FANCY ARTICLES.

The Committee on Fancy Articles have the satisfaction to Report, that, under the new regulations of the Society, in regard to the entry and exhibition of articles, they had better means of examining and comparing their several merits than heretofore—while the public at large have been better accommodated in viewing the exhibition. The Committee desire to express their obligations to the ladies who kindly lent their valuable assistance in guiding them to a correct judgment on the merits of those articles more particularly in the province of the gentler sex. The number of articles is much greater than in former years, and in many there is a decided improvement in quality.

The following is a list of the articles, with the Premiums and gratuities annexed. In some cases where no gratuities appear to be awarded, the articles were of sufficient merit but did not come within the rules of the Society, which require the article to have been produced since the last annual exhibition.

For the best specimen of work by a child under 12 years of age, the first premium is awarded to Master Geo. A. Osborne, Jr., of Danvers, for an elegant ottoman, wrought at the age of 9 years, $3 00

For the second best specimen, to Hannah E. Burke, of Beverly, for a neat and well knit Tidy, 2 00

For the best specimen of Lace Work, to Sarah F. Lee, of Manchester, for a collar, and cap, and a strip of edging of remarkable fineness and workmanship, 3 00

For the second best, to Miss Sarah E. Tuck, of Beverly, for a very superior specimen of Lace Work, 2 00

For a well executed portrait of Jenny Lind, by Mrs. Dustin, a gratuity of 50

Basket of Wax Fruit, looking natural and tempting, by H. P. Black, of Danvers, 12 years of age, 50

Specimens of Pen and Ink Drawings, quite meritorious, by Jos. A. Potter, an invalid 11 years old, 1 50

An ancient Sampler, worked in 1788 by Mrs. Ann Moore.

Two vases of manufactured flowers and dried grasses, very good looking, by Geo. W. Jackson, of Danvers, 25

One vase of similar flowers by Lydia Manning, Salem, 25

One four stranded clothes line, and other specimens of very superior Cordage, by J. Burley, Salem, 1 00

Models of sliding gates, of novel construction by Seth Williams, of Salem. The Committee learn that this style of gate has been used with good satisfaction, 50

Woodland moss and basket, a fine specimen and beautifully arranged, by Lydia Pope, Salem, 50

One elegantly wrought handkerchief by Mrs. Benjamin Upton, jr., Salem, 50

A superior Ottoman by M. E. Kimball, of Salem, 50

A nest of four balls turned one within the other from a solid piece of wood, showing wonderful skill and ingenuity worthy of the most expert Chinese handicraftsman, by J. Lovett Whipple, Salem, 1 00

Bead bag, by Hannah M. Norris, Hamilton, 25

Washing Machine. It is easy of action, and seems well calculated to diminish the horrors of the dreaded washing day; Stephen Granville, Danvers.

Eagle Hay Cutter. This invention appears to be an improvement on similar machines, and a useful article to prepare food for domestic animals; by David Styles, jr., Middleton.

Painting on Ivory, by M. M. Barker, Salem, 25

One bag of Indian Meal, by John Withey, of Beverly, very finely ground, pure and sweet, The Committee can hardly explain why this came under their inspection as a Fancy article, except under the rule that every thing belongs to them which belongs nowhere else, 50

Ottoman Cover in raised Crewel work, a superb article, by Mrs. Abby Masury, Beverly, 50

Hair Work. Two self contracting half wigs, by Caroline Remond Putnam, Salem. A most beautiful and finished article. With such specimens of skill in this line of innocent deception, it seems quite un-

necessary to go abroad to find what is so well provided at home, 1 50

Pin cushion, book mark and needle book; good articles, by Mrs. Dunn, Salem, 25

Shell Work. Monument, by Edward F. Harrington, Beverly, 25

Another monument in shell work, by L. H. Dennis, of Marblehead, 25

Table and monument with shell work. Elaborate and skillful productions, showing great industry and taste, by a lady of Salem.

Vase of Shells filled with artificial flowers; very neat; by Lydia A. Colby, Salem, 25

Shell cottage, very neatly and tastefully made and ornamented, by William C. Hood, Salem, 50

Shell work box, by Gardner Barton, Salem, 25

Tidy, very fine work, by Esther B. Shove, Danvers, 50

Another Tidy, a nice article, by L. B. Harrington, of Beverly, 25

Chair Cushion of silk patch work, containing 325 pieces, by Mrs. Patterson, Beverly, 25

Fancy table, painted with border of flowers and centre ornament, by Mrs. R. A. S. H. H. Jewett, Ipswich, 50

Another fancy table, with figures of patch, laid on and varnished, by Miss Eliza Shaw, Salem, 25

Portrait in crewel work, S. A. Pulsifer, Salem, 25

Case of stuffed birds with fine plumage, very natural and lifelike, showing that the art of embalming is not wholly lost; by S. Jillson, Lynn.

Wrought slippers, by Caty J. Felt, Salem, 25

Crayon drawing, an old oak, well done; Elmira K. Roberts, Salem, 25

Silk Cameo Bag, Harriet M. Dean, Salem, 25

Toilet Cushion, Mrs. S. E. Hodges, Salem, 25

Fancy Plough, made of crystalized Alum, by J. Upham, Salem, a brilliant article and an appropriate ornament to the hall, and suited to the occasion.

Bead Bag, three Ottomans and Chair, showing skill and taste, Mrs. Geo. Kimball, Salem, 1 50

Chair Seat of fine workmanship, by S. W. Wheeler, Danvers, 75

Box covered with fragments of Granite from Mansfield's ledge, in Lynnfield, Miss Mary Mansfield, Lynnfield, 25

Gothic Dress Box, a neat article, Wm. F. Chappel, Salem, 25

Openwork Knit Shawl, of fine material and elegant figure, by M. Westwood, Danvers, 50

Carded Wool, by Amos J. Withey, of Beverly, an excellent article for the spinning-wheel, if that were not an obsolete implement, 25

Fine Crewel Work in frame, Miss E. C. Whipple, Hamilton, 50

Infant's Blanket, superbly wrought in floss, by Lydia T. Caller, Danvers, 50

Card Basket, by R. P. Pratt, Salem, 25

Various fine specimens of Lace Crewel Work by Irene Clark, of Salem, 1 25

Chest of Drawers in miniature, by Charles C. Perkins, of Salem, 9 years old, 25

This lad will make a skillful mechanic.

Two Knit Table Mats, S. F. Shapleigh, Salem, 25

One Table Cover, very neat work by Mrs. M. G. Farmer, Salem, 25

Sampler in frame, by Elizabeth A. Lovejoy, Salem, 5 years old, showing great precocity of talent, 25

Crewel Work, in frame, by Mary E. Felt, Salem, 25

Another by Miss Margaret P. Ives, Salem, very good, 25

A Fruit Tureen inlaid, composed of 113 pieces of wood, and 50 different kinds. Two Vases of 106 pieces, and 100 kinds, and two Canes of 112 pieces, and 86 kinds, were exhibited by Mr. Hiram Andrews, of Salem. They exhibit proofs of great patience, ingenuity and skill, 1 00

Chair Cushion and Chair, by Mrs. S. Sawyer, Methuen, 75

One Crayon Drawing and 3 Fancy Fans, very well done by Lydia L. A. Very, of Salem, 50

Two Wrought Crickets, very neatly done, by Alfred Osborne, Danvers, 7 years old, 50

Box of Pulverized Sage, good material and well manufactured, but the Committee are sagely of the opinion that it is not to be fairly considered a fancy article. Manufactured by Amos J. Withey, of Beverly, 50

Velvet Bag wrought with Beads, a rich article, M. J. Randall, Salem, 25

Box of Needle Cushions, well made, and very useful articles for every good house-wife. Also, a Scrap Book of Engravings, by Charlotte L. Morgan, of Beverly, 75

Bed, Bedstead and Bedding, of proper size for a Lilliputian, but too small for Tom Thumb, very neatly got up by Abby Ann Grant, 25

Pine Apple Potatoes, by J. Dennis, of Marblehead. A very curious natural production, but the Committee are puzzled to know how they came among the manufactured articles, 25

Specimen of Tomato Figs. This is another article more properly belonging to the Horticultural department. It may however be considered in one sense, a manufactured article, having gone through the process of preserving, which makes it a tempting article for the palate, by Miss N. Remond, of Salem, 50

Sampler in frame, exceedingly well done by a lad only eight years of age, Master Geo. H. S. Driver, of Salem, 25

Travelling Bag, a rich article and beautifully wrought, by S. E. Symonds, Salem, 50

Lamp Screen, very beautiful, by Mary A. Putnam, of Salem, 25

Toilet Cushion, Lucy C. Small, Danvers, 25

Ottoman, by Elizabeth Downie, Salem, 50

Pair of Wrought Shoes, Miss Morgan, 25

Two Taborets, the wood work finely carved by Mr. J. F. Mann, of Ipswich, and the top wrought by Miss Mary J. Mann, 13 years of age, 1 00

Three specimens of Nails well wrought and finished, by James Oliver, Saugus, 50

Specimens of Horse Shoes, of excellent workmanship, and superior finish, by D. Harding, Salem. The Committee consider Mr. Harding, in his line of business, a first rate shoemaker, 50

One Chair Covering, of silk patch work, by Miss A. Stowers, of Salem, 25

Jenny Lind bonnets, by W. R. Ellis, of Newburyport. These articles are very elegant, and elicited much commendation. Their stand was continually surrounded by an admiring throng of ladies with most wishful countenances. By giving the name of the Swedish songstress to these bonnets, we think Mr. Ellis entitled to a free ticket, and first choice of seats at her concerts.

Embroidery in frame, by Miss Bowditch, Salem, 25

Infant's coat, by Mary E. Williams, Salem. After diligent search, the committee were unable to find this article, although it was fairly entered. Perhaps it was too small to be seen without a microscope.

Two baskets of dried moss and wild flowers, by E. Downie, Salem, 25

Cloth work basket of handsome shape. A useful article, and elaborately ornamented, by Miss Sarah E. Tuck, Beverly, 50

Bay State Cooking Stove, the Farmers' and Cauldron Stoves, by N. & T. H. Frothingham, Salem. The Cauldron is a capital contrivance for heating water with great saving of mason work in the usual boilers. The Farmers' is the latest improvement in warming, and the Bay State is said to be essential to the married state.

Barrel Chair and fancy hour glass table. Neat and handsome furniture, although the frames are made from cheap and rude materials, by Mrs. Metcalf, Salem, 75

One Rocking Horse, by Joseph Cloutman, Salem. This is a finely formed and very docile animal, and an excellent saddle horse. He has, however, more bottom than speed, and will canter better than trot. He is

kind in any harness, addicted to no bad tricks, and is in all respects sound, wind and limb. The committee unhesitatingly recommend this breed of animals to all juvenile equestrians. They reluctantly turn him over to the appropriate committee on "Mares and Colts" and hope he will draw a liberal premium.

One bundle of curled horse hair Rope, an excellent article, manufactured by E. Lord & Co.

Four Crayon Drawings, by Miss L. D. Cutts, Salem. Very superior, showing great talent as an amateur artist; the drawing and perspective almost perfect, 1 00

Sofa Cushion, by the same, 25

Two Cologne stands, fine bead work, by Anstis D. Cutts, Salem, 25

Butter Stamp. An ingenious contrivance to shape and ornament butter for the market or table—contributed by William Chase.

Hair cloth Cushion, embroidered by S. F. Cutts, 13 years, 25

Taboret in Silk, Velvet and Worsted Patch Work, by Mrs. Joshua Upham, Salem, 63 years of age. A specimen of work which would be creditable to any lady 40 years younger.

Music Stool Covering, embroidered by Lucy A. Swasey, Salem, 25

Ornamental Basket made of fragments of kid of different colors, 192 pieces, by Miss C. A. Neal, 25

Basket of Mosses, a most beautiful specimen of sea flowers, E. H. Valentine, Salem, 50

[The above was enclosed in a neat and rich frame ingeniously constructed by Philip Chase, in the 85th year of his age.]

A fine bouquet of Artificial Flowers, rather calculated to excite the jealousy of the natural ones, Caroline A. Stiles, Middleton, 25

Crewel Work, by Harriet A. Ross, an orphan 7 years old, 50

Ottoman Cover, by Mrs. A. S. Foster, Beverly, 50

Landscape of wrought Satin, by R. Moses, in 1803. Two specimens of same kind of work well done by

Martha Ann Honeywell. What is most wonderful is, that the work was done with her toes.

An ancient piece of Needle Work by Miss Sarah Foster, in 1705, in the town of Boston. Curious as a specimen of the art of embroidery of that day, and useful to contrast with the more elegant needle work of our time.

[The above was accompanied by a Lace Cap, knit by Mrs. Sarah Burt, a lady of 73 years of age.]

Six specimens of Hair Work, by S. C. Potter, Salem, equal to any thing of the kind the committee have seen.

Watch Case beautifully wrought with Beads and Crewel, by Alice M. Mahoney, Salem, 6 years old, 25

Two watch cases, similar to the above, by Martha L. Rogers and Susan K. Rogers, Salem, severally six and seven years of age; each 25

Wrought slippers, Harriet S. Bates, Salem, 25

Another pair, Eliza J. Brown, Lynn, 25

Copies of a volume of Prose and Verse, composed and printed in the leisure hours of the author, while an apprentice in a newspaper printing office. A most commendable instance of the pursuit of knowledge under difficulties, and a good example of application to all apprentices, in whatever avocation, by Charles W. Swasey, Salem, 1 00

This is an elegantly printed and bound volume, of which a dozen copies only were issued for distribution to a few friends. From prologue to epilogue, from title-page to colophon, the author states, it is the work of his own labor, both mental and manual. It occupied about 380 hours in the printing, from June 15, 1849, to April 25, 1850.

Mr. S. has been employed in the Salem Register Office since he commenced his apprenticeship in 1837; and to show what young men can do by a systematic and judicious occupation of their time, we present a few facts stated in the volume alluded to. It must be remembered that his usual avocations in the office, (always well and faithfully performed,) occupy him, on an average, about ten hours a day,

and that he has also served as an active and efficient member of several societies and on various committees. The volume spoken of, comprising 212 pages, contains but from one sixth to one eighth of all he has written, including many contributions to newspapers and monthly and annual publications. In addition to all this he kept a brief daily journal for some eight years ;—ten copies of the first year, ending March 12, 1843, with an Appendix, he printed in a small book of 142 pages, which occupied a considerable portion of leisure time from April 15, 1843, to May 7, 1844. He has also read, in the twelve years and a half, one hundred and seventy-one volumes—several of them from two to five times each—and an aggregate of more than forty-one thousand pages, or on an average about sixteen and a half pages per day. This is exclusive of miscellaneous reading, and of some entire volumes which probably escaped recollection. Such an example of persevering industry is rare indeed, and we are glad of an opportunity to add our testimony in commendation of it.

Two Crickets, very neat, by Mary W. Lamson, Salem, 25

Embroidered work bag, very fine, by Mrs. John Masury, Beverly, 25

Knit window curtain, a splendid article, Sarah A. Bowden, Salem, 50

Two Lamp Mats, fine workmanship, Lizzie B. Newhall, Lynnfield, 25

Three Gutta Percha Ear Trumpets, apparently well adapted to aid the sense of hearing, J. Ford Smith, Salem, 50

Two bottles Ketchup, an excellent article, made by Mrs. S. Wellman, Middleton, 50

A case of rich jewelry and silver ware, exhibited by Messrs Smith & Chamberlain, attracted much attention.

Box of Infants' Socks, by Mrs. Nathan Peirson, Danvers. These tiny specimens of hosiery were very beautiful, and excited much interest. They may become more interesting when the feet are found to occupy them, 50

Ocean Flowers. A very fine specimen in form of a harp, and arranged only yesterday, by Miss Mary

Watson. They exhibit much taste in their arrangement.

One Lace Cape, by Miss E. A. Hall, Salem, 50

Another by Ruth Ann Felton, Salem, 50

Two specimens of Mono-Chromatic Painting, by Lane & Sherwood, Salem. These paintings are very fine, and present the appearance of good aqua tinted engravings. The shading and perspective are very good. This is an art well worthy the attention of young people.

Daguerreotype Portraits and specimens of Penmanship, by T. S. Williams, of Lynn. These were quite creditable to the artist. The wonderful discovery of this art of sun painting may yet enlarge the boundaries of Science, to an extent once scarcely imagined. Already the stars have been Daguerreotyped and fixed on the silver plate of the artist. Why then may not portions of the moon be so represented as to exhibit a part of her disk with that perfection which belongs to this art, and then the plate be examined by a powerful microscope which shall let us into the hidden secrets of our Satellite. We make this suggestion to Mr. Williams with the hope that he will improve the hint, and some fine day—or night, introduce the Committee to that noted individual, the "Man in the Moon."

Two loaves of domestic Bread of excellent quality, made from flour and indian meal, by Mrs. M. Williams, of Salem, 75

The Committee take pleasure in recommending a gratuity for this sample of well made bread, and also recommend to the Trustees, the establishment of an annual premium of sufficient amount to induce competition in this indispensable article of domestic economy. It seems incumbent on the Society to look after the bread as well as the butter of the community, as these articles have a strong affinity for each other. It is a fact as true as it is lamentable, that in the preparation of this essential article of our daily living, we are far behind other na-

tions of the earth. We fear that it has been the unfortunate experience of many of our Society, to be called upon to partake of bread made by unskillful hands from good flour, which has been converted into a dry, tough, heavy, and indigestible mass, noxious to the taste and highly deleterious to health. We believe the Society will be sustained by the general sentiment of the community in any attempt to supply the people with pleasant and nutritious bread. This article of food has in all ages been considered the very staff of life; and all mankind—even the most zealous opponents of capital punishment—have approved of the act of Pharaoh in hanging his chief baker, under the presumption that he was guilty of making bad bread.

FITCH POOLE, Chairman.

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## ON DOMESTIC MANUFACTURES.

The Committee on Counterpanes, Carpetings, and Rugs, Report:

That the exhibition of that portion of Domestic Manufactures which was submitted to their supervision, did much credit to the economy, industry, taste, and public spirit of the matrons and misses of Essex County. It evidenced their economy in converting rags and otherwise almost worthless material into durable, useful, ornamental, and comfort-giving articles for their own sweet homes. Counterpanes, Carpetings and Rugs! How many of the most felicitous emotions and joyous hours of human life are associated with these! And how immensely valuable beyond their intrinsic worth are oftentimes such manufactures, when wrought by the hands of a mother, wife, sister or daughter! How much may they sometimes promote education and intellectual development even? Imagine for a moment a family circle sitting round that beautifully wrought hearth rug, which obtained the first premium on this occasion, very naturally talking about and enlightening each other on the biographical and historical associations suggested by the

house of J. Q. Adams there delineated! How much may the faculties by which order and the beauty of form and color are appreciated, on which so much of human happiness depends, in a family of children, be developed by the correct imitation of a boquet of flowers wrought into a mat on which they play or sleep! But we forbear to pursue this train of thought further.

The committee were highly gratified also, by the work of hands which in the last century clothed "their households with scarlet," and for which they made "coverings of tapestry and fine linen, and clothings of silk and purple"—hands which in early life were "laid to the spindle, did hold the distaff" and work the loom—and which yet with astonishing expertness and effect wield the needle and knitting pin. No less admirable were the exhibited work of misses yet in nursery, or but recently escaped therefrom, whose precocious ingenuity already rivals that of those of their sex old enough to be their mothers and grandmothers. They were also gratified to observe an improving taste and artistic skill in the choice of figures and colors—the management of light and shade, and in all that is beautiful in the design and finish of rugs and other articles submitted to their examination. Many articles which added much to the interest of the show, were entered on the morning of the exhibition too late for premiums, according to the rules of the society. Among these were several pieces of beautiful Brussels and Royal Wilton Carpeting, from the factory of Gilbert Tapley, of Tapleyville, Danvers.

In conclusion, the committee would recommend to the Trustees to continue the rule that all articles of manufactures should be entered and placed in the hall on the day previous to the exhibition, sufficiently early for the committees to examine and award the premiums, uninterrupted by visitors—that a small fee for admission be still required, and that in consequence of the revenue thus obtained, more liberal and numerous premiums and gratuities be offered and awarded—thus affording greater inducements to the producers in the county to show their best works for the benefit of the community.

The committee give their best thanks to those ladies who assisted them in the examination of the articles and in the

awarding of the premiums. The aid and comfort which they afforded us will long be remembered and duly appreciated, and we trust that the fair competitors will be better satisfied with the awards, when they know that their own sex had a voice in their distribution. And we recommend to our successors that they too, if the Trustees should not see fit to appoint ladies on these committees, associate with themselves their wives, or other ladies, in the performance of the duties assigned them.

The committee recommend the following premiums and gratuities:

COUNTERPANES.

To Abigail Greenough, Groveland, for her knit cotton Counterpane, (formed by 1252588 stitches) first prem. 4 00
To Eliza E. Cutts, (eleven years old,) Salem, for her hexagon patch Counterpane, second premium, 2 00
To Sarah Lunt, Newbury, - - - 1 50
To E. C. Green, Newburyport, - - - 1 50

CARPETINGS.

Only two pieces of Carpeting, and those of cut strips of cloth woven by hand, without the use of loom or shuttle, containing twenty or more square yards each, were entered in season for premiums. For the manufacture of these they awarded:

To Martha B. Frothingham, first premium, - - 5 00
" Nancy W. Gray, Beverly, second premium, - 3 00
" Elizabeth Deant, aged 81, on account of the remarkable degree of industry and enterprise in the collecting of the material, coloring, and completing a carpet for her small room, a gratuity - - - 2 00

RUGS.

To Sarah P. Wheeler, Salem, first premium, - 3 00
" Elizabeth D. Poole, Rockport, second premium, 2 00
" Lucy B. Baker, Beverly, three braided mat, a gratuity 1 00
" R. L. Woodbury, Hamilton, " 1 00
" Mary A. Dodge, Wenham, " 1 00
" P. F. Atkinson, Andover, " 1 00
" Mary Ann Perkins, Essex, " 1 00

To Abba B. Annable, Hamilton, a gratuity, 1 00
" Lucy Nutter, Essex, " 75
" Martha Russell, Salem, " 50
" Mrs. Osborn, Salem, " 20
" Mary A. Leach, Beverly, " 50

By order of the Committee,

ANDREW NICHOLS, Chairman.

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## ON CLOTH AND HOSIERY.

The Committee on the manufacture of Cloth and Hosiery, Report, that the articles exhibited in this department, though not numerous, were all of excellent quality and workmanship. They recommend the following awards, viz:

To James Bailey, Andover, one piece flannel, first prem. $4 00
" B. P. Adams, Topsfield, one piece frocking, gratuity 2 00
" J. Mann, Ipswich, three boxes hose, " 1 00
" Sarah H. Tibbetts, Salem, table cover, " 1 00
" Sarah Lee, Manchester, table cloth and fringe, " 1 00
" Huldah D. Estes, Danvers, two table cloths " 1 50
" Huldah D. Estes, Danvers, two hand cloths, " 75
" J. Banvard Teague, Salem, two pair stockings, " 50
" Mrs. Geo. Kimball, Salem, one " " " 50
" Mrs. Jerusha Rhodes, Lynn, two pair hose, " 62
" Mrs. J. Bailey, Andover, one pair stockings, " 25
" Julia Greenlow, Marblehead, 1 pair infants socks, gratu. 50
" Margarett Brown, Hamilton, 3 pair men's socks, " 50
" Mrs. Esther Smith, Lynnfield, one shirt, " 50

One case of eight pieces of woolen cloth, from the Rockdale manufactory, Danvers, entered by E. A. Russell, was a good specimen of that description of goods—but did not come within the rules of the Society authorizing the award of a premium or gratuity.

For the Committee, J. HOBBS.

## ON LEATHER,

### AND ARTICLES MANUFACTURED THEREFROM.

The Committee on Leather, and articles manufactured therefrom, Report: that they were pleased to find more Boots and Shoes exhibited, than last year, although they cannot but express their regret that in this department more interest is not manifested. This department includes articles of the largest manufacturing business of the county, and we cannot but express the hope, that a larger display of specimens will be exhibited another year.

The committee were not authorized to give any premiums for manufactured leather, and would take the liberty to recommend that premiums be offered in future years for the best specimens of both Sole and Upper Leather, also for specimens of curried Goat and Kid skins.

As these articles are so closely allied to our UNDERSTANDINGS, it seems important that sufficient inducements should be offered to secure to it that notice which its importance requires. The Committee have awarded the following premiums and gratuities:

To Jacob Dickinson, Georgetown, for the best thick boots, 3 00
" D. B. Stickney, Groveland, for the 2d best " " 2 00
" Amos Gould, Wenham, for specimens of California boots, gratuity, 2 00
" Jacob Dickinson, Georgetown, for calf skin boots, second premium, 2 00
" Jacob Dickinson, Georgetown, best thick brogans, second premium, 2 00
" Putnam & Black, Danvers, California brogans, gratu. 1 00
" Francis Dane, " lace brogans, " 1 00
" Wm. H. Poland, Wenham, army brogans, " 1 00
" Alfred Brown, Boxford, women's Dutch boots, " 1 00
" William H. Graves, Ipswich, ladies' walking shoes, first premium, 2 00
" Stephen Driver, Salem, ladies' kid slippers, 1st prem. 1 00
" " " " specimens of children's bootees, gratuity, 1 00

To Stephen Driver, Salem, excelsior patent leather slips, gratuity, 1 00
" Wm. H. Graves, Ipswich, specimens morocco polka boots, gratuity, 1 00
" Wm. H. Balch, Groveland, men's cloth slippers, gratu. 1 00
" Christopher Johnson, jr., Lynn, specimens of ladies' gaiter and polka boots, gratuity, 1 00
" Richard Tenny, Georgetown, leather shoe strings, 1 50
" John A. Learoyd, Danvers, curried leather, gratuity, 1 00
" David Baily, Danvers, peg cutter for cutting pegs from the heels of boots, gratuity, 50

Your Committee would take the liberty to suggest the propriety of publishing in the Transactions of the Society, the statistics relating to the manufacture of Leather and articles therefrom, in the county of Essex.

For the Committee. MOSES BLACK, Jr.

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## ON THE DAIRY.

The Committee, in proceeding to the discharge of the duty assigned them, found fourteen lots of Butter upon the table for their examination, viz. eight of June, and six of September butter. One lot of June butter, (No. 7,) the committee found the statement had no name attached to it. The committee unanimously recommend that the following premiums be awarded, viz:

FOR JUNE BUTTER.

To Jonathan Berry, Middleton, first premium, $10 00
" Perley Goodale, Danvers, second premium, 8 00
" John Preston, Danvers, third premium, 6 00

FOR SEPTEMBER BUTTER.

To Elijah Pope, Danvers, first premium, $10 00
" Nathaniel Felton, Danvers, second premium, 8 00
" Warren Averill, Ipswich, third premium, 6 00

All the specimens of butter presented were good, but th

quantity, in proportion to the number of cows, does not come up to the amount that we believe would be attained, by the same labor and expense, if more care should be exercised in the selection of the best cows. The improvement in dairy stock does not keep pace with other improvements that are going on among us. We KNOW that the butter made in this county is equal in quality to any in the country, and we BELIEVE it can be made equal in quantity by a more judicious selection of dairy stock.

For the Committee. JOHN STONE, Jr.

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JONATHAN BERRY'S STATEMENT.

I present for your inspection one pot of June butter, containing twenty-eight pounds, being a sample of two hundred and fifty-four pounds, the product of six cows between the 20th May and 1st July. Also, twenty-eight pounds of September butter, a specimen of seven hundred and twelve pounds made from the 20th May to the 20th September, from seven cows.

The feed of the cows has been a common pasture; since the 10th of August they have had green corn fodder, and from the first of September each has had one quart of Indian meal daily.

PROCESS OF MAKING.—The milk is strained into tin pans, and set in a cool room or a cellar prepared for the purpose. After remaining there from thirty-eight to forty-eight hours, the cream is taken off and kept in a vault, till it is churned. Churn once a week. The buttermilk is worked out by hand, and the butter salted with about one ounce of salt per pound.

Middleton, Sept. 26, 1850.

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PERLEY GOODALE'S STATEMENT.

I offer for your examination one pot of June butter, contain-

ing thirty-one and a half pounds, a specimen of two hundred and thirty pounds, made between the 1st and 30th of June, from the milk of eight cows, two heifers, and one farrow cow, all of native breed. Their feed has been common pasture.

Process of Making.—The milk is strained into tin pans, and placed in the cellar, where it stands from twenty-four to thirty-six hours; it is then skimmed, and the cream put in tin pails, and kept in the same cellar. Churn twice a week. We are very particular to work out every particle of the buttermilk, and salt with nearly one ounce of rock salt to the pound.

North Danvers, Sept. 26, 1850.

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JOHN PRESTON'S STATEMENT.

I present for your inspection a jar of June butter, containing twenty-seven pounds, a sample of one hundred and fifty pounds made between the 1st of June and 9th of July, from the milk of three cows and one heifer, of native breed. Also, two boxes of September butter, containing nineteen pounds, being a sample of three hundred and fifty-one pounds made between May 25th and September 24th, from the same cows, two of them coming in June 5th. We have used in the family and sold about four quarts of milk per day. The feed of the cows has been common pasture until August 5th, when we commenced feeding with green corn fodder.

Process of Making.—The milk is strained into tin pans, and placed on the bottom of a cool and airy cellar. It is skimmed in about thirty-six hours. The cream is put in stone jars, and is churned twice a week. The buttermilk is worked out thoroughly without the addition of cold water, and salted one ounce to the pound.

Danvers, Sept. 25, 1850.

ELIJAH POPE'S STATEMENT.

I offer for your inspection a jar of June butter, containing thirty-one pounds, being a specimen of one hundred and sixty pounds made from the milk of three cows, from June 1st to July 9th. Also, two boxes of September butter, containing eighteen pounds, being a sample of four hundred and eleven pounds made from the 1st of June to the 24th of September, from the milk of the same cows, with the addition of one cow since the 10th of July, and one three year old heifer since the 12th of August. Their feed has been common pasture.

Process of Making.—The milk is strained into tin pans, and stands in a cool cellar from thirty-six to forty-eight hours, when the cream is taken off and put in tin pails, and stirred every day. We churn twice a week. During the warmest weather the cream is placed in the well from twelve to twenty-four hours before churning. After it is churned the buttermilk is thoroughly worked out, and the butter is salted with three-fourths of an ounce of ground rock salt to the pound, except the June butter, which is with one ounce to the pound. After standing six hours it is again worked, and weighed each pound separately.

Danvers, Sept. 25, 1850.

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NATHANIEL FELTON'S STATEMENT.

I present for your inspection one firkin of June butter, containing twenty-six pounds, made on the 20th of the month. Also, three boxes containing twenty-six pounds made on the 23d of September, as specimens of eight hundred and twenty pounds made between the 23d of May and 23d of September, from the milk of seven cows and two heifers; one of the cows has been in milk eighteen months. We have used milk in a family of nine, and sold two gallons per week. The cows have had common pasture till the 20th of August, since then they have had corn fodder once a day.

Process of Making.—The milk is strained into tin pans, and stands from thirty-six to forty eight hours, when the cream is taken off and put into tin pails, and stirred daily. We churn once a week. During the warmest weather the cream is hung in the well about twelve hours before churning. After the butter comes the buttermilk is thoroughly worked out with the hands. It is then salted to the taste, (about an ounce of salt to the ponnd.) After standing about an hour it is worked again, and weighed, each pound separately; it is then put in the shape in which you see the September butter to day, and sent to market. There was put into the June butter about one third of an ounce of loaf sugar to the pound. It has been kept in the firkin, covered with fine salt. The firkin was placed in a cask in the cellar, and brine poured in around it till it rose as high as the butter in the firkin.

Danvers, Sept. 25, 1850.

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WARREN AVERILL'S STATEMENT.

I present for inspection one box of June butter, containing twenty-five pounds, being a specimen of seventy-eight pounds made between the 1st of June and the 9th of July, from two cows. Also, one box of September butter, containing thirty pounds, being a specimen of two hundred and nine pounds made between the 20th of May and the 20th of September, from the same cows. One of the cows calved the 1st of May, the other the 27th August; the May calf I took off the 25th of May, the August calf I took off the 12th of September. We use all the milk for butter, except that for the family, which on an average is one quart per day throughout the season. We make butter the year round, and sell no milk until the cream is taken from it. In cold weather we find a ready market for all the skim milk and buttermilk. In this way we think it more profitable to make butter than to sell the milk direct from the cow. After my cows come to the barn in the fall, I give

them two quarts of meal or fine feed each per day through the winter until they go to pasture, and the best of English hay. I find in keeping cows in this way they come out in as good flesh to go to pasture in the spring, as they are when they go to the barn in the fall. My pasture is good, so by keeping well in the winter what they eat through the pasturing season goes to milk and butter. I give them no meal in pasturing time; they have then nothing but what the pasture affords for them, except a few green stalks at night.

Process of Making.—The milk is strained into tin pans, where it stands from thirty-six to forty-eight hours; it is then skimmed, and the cream put into tin pails standing on a brick floor. We churn once in five days, sometimes not until the week comes round. After the butter comes the butter-milk is drawn off, and the churn filled nearly full of cold water, and then the butter is stirred with the crank until the butter-milk is apparently all out, it is then taken out of the churn and beat by the hand until all the butter-milk is out, it is then salted with from three-fourths to an ounce of ground rock salt to the pound, and again worked over, and made into pound and half pound balls, fit for market.

We commenced the 1st day of January to weigh all the butter we make for the year, and the quantity of milk at the different seasons to a pound of butter. From the 1st of January to the 20th of May, we made one hundred and ninety-eight pounds of butter, the average quantity of milk to a pound being eight quarts, or a trifle over. The last week in June it took a trifle short of eight quarts to a pound. Last week I tried my cow that calved the 27th of August, and she gave one hundred and eleven quarts of milk, which made twelve pounds of butter, or to come to the exact quantity, one ounce short. This is a native cow;—I raised her from the cow for which I took the first premium at Lynn in 1846; she is five years old, and has had three calves. My other cow is a half sister, of the same age. I milk myself all the time, and have regular hours at the different seasons of the year. In this way I find I can keep the milk up, when others that are milked when most convenient, are dried up. I also make a practice

in cold weather to card and brush my cows down every morning, and see that they lie warm and dry at night.

Ipswich, Sept. 25, 1850.

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CHARLES P. PRESTON'S STATEMENT.

I present for your examination one pot of June butter, containing thirty pounds, being a sample of three hundred and seven pounds made from the milk of four cows and five heifers between June 1st and July 9th. We made also, from the same cows, eight hundred and five pounds from May 24th to September 24th. The feed of the cows has been an ordinary pasture until August 10th, when we commenced as usual feeding with green corn fodder in addition.

The milk is strained into tin pans, and set on the bottom of a cool cellar, where it remains from twenty-four to thirty-six hours, according to the weather. It is then skimmed, the cream put in stone jars and placed in a vault, where it is rendered as cool as possible previous to churning, which is done in a common churn, made nearly in the form of a barrel, with floats within attached to a crank, giving the necessary motion to the cream. This we consider superior to the Thermometer, or any other "patent" churn after a fair trial, having obtained more butter, and of better quality. It must be known to farmers who have tested the temperature of cream previous to churning, that with the cream at sixty or sixty-two degrees, (which is the rule applied in using the Thermometer churn,) butter, during the summer months, cannot be produced of such a degree of hardness as is desirable, neither of as good quality in other respects as when the cream is churned at a lower temperature. This has been ascertained after a fair trial.

One of the most essential points in making good butter is known to be the working out of every particle of butter-milk, which we do with the hands, without the application of cold water.

The butter is salted with an ounce of rock salt to the pound, and for long keeping should have the air excluded as much as possible, no brine being necessary.

North Danvers, Sept. 25, 1850.

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DAVID BAKER'S STATEMENT.

I enter for premium a box and a jar of September butter, containing fifteen pounds made last week, as a sample of three hundred and three pounds of butter made the present season, (since May last,) from three cows, partly of the Durham breed. Their feed has been only common pasture, till within a month, when they have had green corn fodder every morning.

In the hottest weather we churn twice a week, at other times once. The milk stands thirty-six hours before skimming. Salt one ounce to a pound of butter—use the bag ground salt.

Andover, Sept. 25, 1850.

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## ON BEES AND HONEY.

The Committee on Bees and Honey submit the following Report:

Two specimens only of honey were entered for premiums, and laid before the committee. This is the first instance in our recollection, of encouragement being given by the Society, by the offer of premiums for the best management of bees, and the best samples of honey made within the season. Five dollars were appropriated by the Trustees for this purpose.

The first premium, (of three dollars,) is recommended to be given to Abraham Lord, of Ipswich, for the best specimen of honey.

The second premium, (of two dollars,) to John F. Kimball, of Boxford.

Each being accompanied by a statement of the mode of management of the bees, the comparative value of each will be thereby shown. The quality of the honey the committee conceive, is not affected by the particular management of the bees, but by the kind of pasture in which they feed, and especially by the part of the season in which it is made,—the earliest made honey is supposed to be always the best flavoured. It may therefore be suggested that if any mode of management could or would be adopted, to expedite the early swarming of the young colonies, or otherwise the early commencement of their work, it would be important. It was well suggested however, by Dr. Kelley, (who was originally appointed chairman of this committee,—it is regretted that his late arrival at the exhibition required the Society to make a different arrangement of the committee,) that too much management of bees was not good, that they are a kind of insect peculiarly and tenaciously attached to their natural instinctive movements.

Your committee would have desired opportunity to have commented more at large on this subject, as it should be well understood by the poor, who stand in need of the industriously earned products of the bee as well as their own. The anecdote of the Curate who applied to the Bishop for help, as his salary was insufficient, and inquired what he should do, was answered, "O, keep bees," may not be here out of place. And for the rich it is a branch of natural history both amusing and interesting, while it supplies for the table food delicate and delicious.

If the peculiar movements of these interesting insects were to be better understood, it might eradicate from the minds of the rising generation many superstitious notions in regard to their habits. Many of our older inhabitants at this day, and in this enlightened age, practise dressing the bee house in mourning, covering it with black cloth, when one of the family, particularly the head of it, dies; they really believe if this is not done at the time of such events, the bees will all die, or forsake their home.

The Committee unanimously concur in the opinion, that the keeping of bees ought to be further encouraged, under the

belief that there is in all our country towns, and in our cities and villages, abundant pasturage still unoccupied; that they injure not the flowers and plants from which they collect their stores, and in this respect are totally harmless; and as they involve but little expense, may become a source of considerable income, particularly to a class of people needy and deserving.

Submitted in behalf of the Committee.

TEMPLE CUTLER.

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ABRAHAM LORD'S STATEMENT.

I have two kinds of hives now in use, one with two boxes on the side, one above the other, which will hold fourteen pounds of honey. These hives are very good, but not so good as some I have with two boxes in the top which will hold eleven pounds of honey each. One of these boxes has glass sides, and is not full. It was taken from a hive that had a swarm placed in it the sixth day of June last, which has filled the hive and given me thirteen pounds of honey this season. In the boxes I have had four swarms of bees this season, which with their honey are worth seven dollars each, exclusive of their hives,—the hives are worth three dollars each, making the hives and bees worth ten dollars each. I have also taken sixty-four pounds of honey in boxes, worth twenty cents a pound, making twelve dollars and eighty cents. Thus the income from my five stocks of bees this season, is forty dollars and eighty cents.

My hives are made with a pane of glass in the back, to ascertain the quantity of honey in store, and the strength of the stocks of my bees, as it is sometimes the case that after a stock has thrown off its first swarm, some accident happens to the young queen, by which the stock is left without its leader. As the old queen always leads off the first swarm, the loss of the queen may be ascertained in two weeks from the time the first swarm left the hive. If they decrease, they have lost their queen; in this case, to save my stock I unite to them a second

or third swarm, if I have them. To do this I turn the hive I wish to unite to them upon its top, then setting the stock hive upon the one turned bottom up, I make them secure that no bees escape. They will soon ascend, and the stock will readily receive them with their queen.

Young swarms that are not strong enough to stand the winter I unite with the parent hives. In doing this I have a hive the same size as that I intend to take, fixed bottom upwards; when this is ready, I light a piece of puff ball as big as a hen's egg, and as soon as it burns well I place it in a copper box full of small holes with a pointed top, that the bees may not rest on it in dropping. I then place the box in the hive that stands upon its top, and the hive I wish to take upon the one thus turned upwards; then tie a cloth round the two hives, that no smoke escape, and the bees will soon drop. When they are all down and quiet, lift the hive gently off, and turn the bees that have fallen, upon a table; then look for the queen bee, which may be easily known by her length being much greater than the working bee, with very short wings. If I find her I keep her safe; if not, I cut out the combs one by one, as she does not always drop, but holds on the combs. After I have found her I sweep the bees into a clean empty hive, and lay a piece of paper or sheet of tin upon the hive, punched full of small holes a sixteenth of an inch over; then set the hive I wish them to unite with, upon the paper or tin, and keep them separate twenty-four hours, then draw the paper or tin out, and they will soon ascend and unite with the stock. In uniting my weak swarms, as above described, I secure the strength of my stocks, which having swarmed often in summer are weak in bees, though heavy in honey.

The health of my bees I consider very important. No one can expect to have strong and healthy bees, unless they are properly ventilated. Ventilation is important in the hot season of the year, but not so important as in winter, as then a good deal of steam rises from the breath of the bees, which, if it has no way of escape, will settle on the top of the hive inside and become water, and run down upon the combs and on the sides of the hives, and freeze. Thus the bees are kept damp, and

are likely to die with the rot, or become so weak in the spring as not to be worth much. To prevent this harm to my bees, I have a hole cut in the front of my hives two inches from the top, two inches long and three eighths of an inch deep. This serves as a ventilator and second door. I also keep the holes leading from the hives into the boxes open, which lets off much of the damp air.

I never kill young swarms because they have not honey enough to stand the winter, but rather unite them to some stock that has enough and to spare, as they will more than pay for doing it the next season. Twenty pounds is enough to winter a good swarm.

I would not recommend taking up old stocks, as the honey is poor, but would recommend cutting out some of the bottom combs when they become furred up with age. This may be done by the aid of a bee dress or the puff ball. Puff balls may be found by the way side, or in pastures; they should be picked when half ripe and put in a cloth and pressed to half their size, then dried in the sun. When ripe they give a dirty powder like smoke; the smoke of the puff ball does the bees no harm, as they recover in twenty minutes. Care should be taken that the sun does not shine on the hive either in summer or winter. I have said nothing about the bee moth, having tried several experiments, and none to my satisfaction. I am led to believe that strong and healthy stocks of bees will take the best care of these intruders.

Ipswich, Sept. 24, 1850.

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JOHN F. KIMBALL'S STATEMENT,

In June 1847 I found a swarm of bees in the woods, which was hived in a small old fashioned box hive, and carried home, a distance of about two miles. They went quietly to work in their new residence, and during the season nearly filled the hive. The next season, (1848,) a swarm came out early in

June and settled on a board placed on stools about one rod in front of the hive; these were immediately hived again, and went quietly to work. In 1849 three swarms came out, (two from the old hive,) all of which settled on the board placed as above, and were hived without difficulty. This year I have had but four swarms come out, all of which came from the two oldest hives. I have now six well filled hives in prime order, besides which I have had three second swarms, (one hive swarming twice the same season,) that were of comparatively little value. In swarming time I find if a board is placed on chairs or stools, as above stated, one or two rods in front of the hives, the swarms that come out will usually, (though not always,) settle upon it, and may then be easily hived. My hives are of uniform size, about seventeen inches high, and thirteen inches each way at the top, growing a little larger at the bottom. Holes about two inches square are made in the top, and boxes similar to the one before you placed over them. These boxes when filled are removed by running slides under them, and others placed in their stead, thus avoiding the inhuman practice of "murdering the bees with fire and brimstone."

My hives stand upon benches, with no covering except boards placed above them to shelter them from the sun. Thus the wind has free access to them, and no protection is given the bee moth or miller. I have this season united two swarms in one hive,—they were both second swarms, and of course small. The first went into the hive without the box, the hole in the top being covered; the other came out two days later, and went into the box, which in the evening was set in its place upon the hive,—no disturbance was seen among the bees. Of this plan, however, I speak with diffidence, as I have made but one trial. My bees are daily visited in warm weather, and cobwebs, &c., are carefully brushed away. The honey presented for your inspection was made between June 25th and July 15th, of which there are about ten pounds.

Boxford, Sept. 25, 1850.

## ON POULTRY.

The Committee were pleased to see so large a collection of choice fowls on the ground, notwithstanding the unfavorable state of the weather, and have every reason to believe that there would have been a much larger number, if the day had been fine and suitable to show poultry to advantage. The evident improvement in this branch of rural economy was highly gratifying to the contributors and spectators generally, as well as to the committee, who feel under many obligations to the various contributors for the admirable manner in which their birds were arranged, and to the spectators for the interest manifested by them in what we consider one of the most profitable of our agricultural interests. We would impress upon the minds of our agricultural friends, and others, the importance of bestowing more attention upon this kind of stock than has hitherto been done. It is not, as many suppose, a small item, and not worthy of more than a passing notice,—it is a fruitful source of wealth and comfort to every one. Our fowls furnish us with the choicest luxuries of the most wholesome nature, and where can a person be found, that would not take pleasure in tending a few choice fowls, and feel themselves amply repaid by the large number of rich eggs that such birds would be sure to return them for their kind attentions? Where could we find a substitute for their meat at our tables, or for their delicate and wholesome nutriment to the invalid? And the puddings, and good old fashioned pumpkin pies, that cannot be produced without their share in the matter? It is not our purpose to recommend any one particular variety to the exclusion of all others, but would earnestly request each one to prove by personal experience the merits of many, if not all of the different varieties of our standard fowls, and of such of the fancy ones as he may have time or inclination to do, so as to be able to impart information of benefit to others who are, or who may wish to be interested in the subject. If any should feel inclined to doubt the importance of poultry, as one of our products, we would respectfully point his attention to figures, not fictitious ones, but those gathered from the most

reliable sources. For instance, from the Montreal Pilot, we learn that there were shipped from Montreal to the United States from May 1st of the present year to June 16th, two thousand and seven hundred barrels of eggs. Dr. Bennett tells us, in his work upon poultry, that the value of poultry in the United States at the present time, will reach the fine little sum of twenty millions of dollars. We find that in the year 1848 the sales of poultry in the city of Boston amounted to over one million of dollars, and the sale of eggs to as much more. In the face of such facts, who will say it is a matter of little consequence whether we keep fowls or not, or whether they are good, bad, or indifferent? For a description of the different varieties, manner of rearing, feeding, fattening, and a description of their diseases with instructions for their treatment, we would respectfully refer our friends to the large number of valuable treatises now published. In conclusion, the committee do not hesitate to assert, that with proper attention fowls can be reckoned as profitable stock for every farmer, and with pleasing satisfaction they confess that the show of poultry in the present instance far exceeded in number and quality, their most sanguine expectations. Let each contributor also, feel the satisfaction of having had a part in this exhibition, and resolve that, fine as the display for 1850 was, he will try and eclipse it in 1851.

The whole number of contributors was forty-nine. Whole number of fowls five hundred and forty-eight of which forty-three were water fowls, four turkeys, and also two fine lots of pigeons. The committee would award as follows:

C. F. Putnam, of Salem, for a fine display of Shanghae, Black Spanish, Singapore, and six other varieties, $2 50

G. W. George, of Haverhill, fine Shanghae and Imperial Chitagong fowls, 2 50

D. Buxton, jr., South Danvers, fine Shanghae, Black Spanish, Mexican, and one other variety, 2 50

J. H. Brookhouse, Salem, fine Shanghae, Java, Golden Polish and one other variety, 2 50

S. & O. Southwick, Danvers, fine Shanghae, Java, Black Spanish, Dorking, and six other varieties, 2 50

Eben Sutton, Salem, for an exceeding fine display of water fowls, as follows:—Bremen, Wild, China, and Mongrel Geese, S. American, Aylesberg, Musk, and White Ducks, 2 50

P. L. Osborne, Danvers, fine Shanghae, Black Spanish, Silver Pheasant, Dominique, and two other varieties, 2 00

W. Brown, N. Andover, fine Bolton Greys, 1 50

A. H. Hall, Rockport, fine display, eight varieties, 1 50

And would recommend to the following persons a gratuity of $1 50.

W. N. Brookhouse, Middleton, fine lot of Fowls, 1 50

Charles Creasy, H. Grove, fine lot of Fowls, 1 50

G. W. Williams, Salem, fine lot of Fowls, 1 00

R. P. Waters, Beverly, fine lot of Fowls, 1 00

Leverett Knight, N. Danvers, fine lot of Hybrids, 1 00

For the Committee, E. B. LITTLE.

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## ON PLOUGHING WITH DOUBLE TEAMS.

The Committee on Ploughing with Double Teams Report: That there were fourteen entries, and thirteen teams drew lots and ploughed. Ten of the lands were run out previously, and three were run out the morning of the show, after the teams were on the ground, and by some mistake were made about one third less than the quantity required, which was not discovered by the committee until after the lots were drawn for, and the teams had started.

The committee concluded that the competitors who drew the small lands ought not to be prejudiced in consequence, and therefore awarded the premiums without reference to the quantity of land ploughed, although less than the rods specified and required.

Lot No. 1 was drawn by John Washburn, of Lynn.

" No. 2 " " Richard S. Bray, of Newbury.

" No. 3 " " Paul P. Pilsbury, of Andover.

Lot No. 4 was drawn by John Newhall, of Lynn.
" No. 5 " " B. W. Crowninshield, of Topsfield.
" No. 6 " " George P. Wilkins, of Middleton.
" No. 7 " " Moses Pettengill, of Topsfield.
" No. 8 " " Jonathan Berry, of Middleton.
" No. 9 " " John S. Hubbard, of Newbury.
" No. 10 " " Horace Ware, Jr., of Salem.
" No. 11 " " Elias Clough, of Lynn.
" No. 12 " " David S. Caldwell, of Byfield.
" No. 13 " " Franklin Alley, of Marblehead.

The committee, after a full consultation, and as thorough an examination of the work as they could give, considering the storm, with some slight difference of opinion agreed to award the premiums as follows:

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| To Horace Ware, Jr., first premium, - - | $10 00 |
| " Jonathan Berry, second premium, - - - | 8 00 |
| " Franklin Alley, third premium, - - - | 6 00 |
| " Richard S. Bray, fourth premium, - - - | 5 00 |
| " John S. Hubbard, fifth premium, - - - | 4 00 |

In the opinion of the committee the work done by Horace Ware, Jr., and Jonathan Berry, was nearly equal. The preponderance was in favor of Mr. Ware's in consequence of the fine finishing up of the land, which the committee have rarely seen equalled.

On the land ploughed by Franklin Alley, the furrows were kept straight, and of a proper and equal width, and the furrows laid uncommonly smooth; however the ploughing was not as deep as that done by some other competitors, and to this in some measure may be attributed the very perfect manner the furrows were turned. We consider it a fact, that a furrow six or seven inches deep can be handsomer laid than a deeper one, with the same skill in exercise. If his land had been ploughed equally deep, and had presented the same appearance as it then did, it certainly would have been as good as the best.

The work by Richard S. Bray and John S. Hubbard was done in good time, the ends of the furrows of a like width of the balance, and all well turned. The several competitors varied in the time occupied, from twenty-two to forty minutes.

The shortest time taken was by Franklin Alley, and the longest by John Washburn. The land drawn by Mr. Alley was one of the small ones, and at the speed he drove he would have ploughed one of the lands of proper size in about thirty minutes. The shortest time taken by any team on the full sized lands was twenty-eight minutes, by B. W. Crowninshield. Average time on the full lands, thirty-four and seven tenths minutes. The committee consider it due to the competitors to say, that the work generally was done remarkably well. David S. Caldwell and John Newhall would have received premiums, if there had been more to award.

The slight difference of opinion in the committee as to the merits of the work, if they were good judges, is evidence that the ploughing was well done. It was the intention of the committee to have noted the kinds of ploughs used, but the severity of the storm drove the teams from the field before that was ascertained.

In behalf of the Committee. MOSES NEWELL.

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## ON PLOUGHING WITH SINGLE TEAMS.

The Committee on Ploughing with Single Teams ask leave to Report, that there were nine teams entered for premiums. Seven only appeared on the ploughing field. The work was well done by all. Upon a careful examination of the work the committee have awarded:

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|---|---|
| To Jackson H. Pickering, Danvers, first premium, | $8 00 |
| " Elijah Pope, Danvers, second premium, | 6 00 |
| " Daniel Putnam, Danvers, third premium, | 4 00 |
| " William Foster, Andover, fourth premium, | 2 00 |

All the ploughs used were Eagle No. 2, manufactured by Ruggles, Nourse & Mason.

For the Committee. JACOB BROWN.

## ON IMPROVED AGRICULTURAL IMPLEMENTS.

The Committee on Improved Agricultural Implements have attended to that duty, and Report:

That very few articles were presented either for premium or exhibition. There were in the room two ploughs from the Milford, (N. H.,) Manufactory, placed there, as the Committee suppose, by William Chase, of Salem, as his card was attached to them, but there was no person present to describe the improvement, or to explain their superiority. The committee would however say that they were very handsome and well made, and have no doubt they were very good ploughs. There were also some stove castings, and a cast iron boiler, with the same card attached, very fine specimens of castings, but no person present to give any explanation whatever.

W. J. Poor, of Andover, presented what is called a Self-adjusting Ox-Yoke, a very handsome specimen of workmanship, but as Mr. Poor was not the inventor, but only the maker, the committee cannot, according to the rules of the Society, recommend any premium or gratuity.

Stephen Granville, of Danvers, presented a new washing machine, invented by himself, which the committee believe, from what they saw of its operation, to be a very good article, if not the best now in use, and they would recommend that there be paid to Mr. Granville a gratuity of three dollars.

David Stiles, of Middleton, presented a machine for cutting hay, &c., called the "Eagle Hay Cutter," for which he has recently obtained a patent. The committee were very much gratified with its operation in cutting hay, corn stalks, &c., and believe it equal to, if not the very best article of the kind, that has ever come under their observation, and they cannot express their own views of the machine in any better form than is expressed in an article headed, "Stiles' Patent Eagle Hay Cutter," and published in the "Farmer and Mechanic," a paper published in the city of New York, and from which article they make the following extract: "In this machine the inventor entertains the most entire confidence, and considers its advantages over all other kinds now in use, as entitling it to

the consideration of the agricultural community generally, from the fact that it will cut any and all kinds of fodder, with equal facility, combining a self-feeding apparatus, which obviates the danger and inconvenience of hand feeding, and a very simple arrangement by which the cutter may be changed, with the greatest facility for the purpose of cutting the fodder any desired length. By its construction also, the machine when in operation, separates much of the grit and other deleterious substances from the fodder, thereby obviating injury to the knives, which may be readily removed for grinding or other purposes when desired, and which are never liable to be broken or injured by sticks, &c., which are frequently found in hay drawn by the horse rake. This machine is constructed in the most substantial and perfect manner in all its parts, and consequently will last a long time with little or no expense for repairs. Indeed, the simplicity, efficiency, and ease of its operation, cannot, we think, be surpassed by any that we have seen."

The committee therefore would recommend that there be paid to Mr. Stiles, for his "Eagle Hay Cutter," a premium of seven dollars.

Charles Gill, of Exeter, N. H., had intended to have presented for exhibition the "Independent Horse Rake," but by some mistake it did not arrive until after the committee had separated, and of course they had no opportunity to examine it or see its operation, but they have no doubt from the recommendations which have been given by those farmers who have had it in use upon their farms, that it is as good as any horse rake now in use, if not better.

DANIEL ADAMS, Chairman.

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## ON RECLAIMED MEADOWS.

The Committee on Reclaimed Wet-meadows and Swamp land, submit the following Report:

Two claims only were entered with the committee, one by

John Porter, of Wenham, and one by Calvin Locke, of Ipswich. Three of the Committee,—Messrs Osborn, Dole, and Merriam,—visited these meadows the second week in July, before the grass was cut, although Dr. Porter had begun to cut his. The meadow of Dr. Porter was situated within twenty rods of his house, which made it very desirable to have something better than litter growing upon the meadow. It was in the form of a basin, surrounded by a bold, sandy, and fine gravelly bank, very convenient for application to the meadow, which could be and is effectually drained. The outlay which has been made upon this piece of meadow, appears to us a judicious one, and one which will amply remunerate the owner. The very accurate and explicit statement given by Dr. Porter will supersede any further remarks from us. He suggests the importance of future attention, which is necessary in all such boggy lands. The natural meadow grasses are inclined to spring up, without future dressings. The committee would recommend that the first premium, (of twenty dollars,) be awarded to him.

The piece of land offered by Mr. Locke is a low, flat swale, consisting of a black sandy soil, with a natural growth, principally of the alder, a soil suited to that bush. The alder is perhaps as easily subdued and extirpated as any bush we have to contend with. After draining and cutting off the bushes, this land could be worked upon with the oxen and plough. This being the third crop of hay since the land was reclaimed, the quality was probably not quite so good as in the other two years; some natural grasses were mixed with the English, although there was a very good crop ready for the scythe. Mr. Locke not being the owner of the soil, had leased it for twenty years, and was so well satisfied with his success that he had already another portion of the swamp adjoining, in progress of reclamation, being planted with potatoes and vines, which likewise promised well. It will be seen by Mr. Locke's statement that the expense of subduing his land has been somewhat less per acre than that of Dr. Porter's. We will take the liberty to suggest to Mr. Locke that we think such soils as he is at work upon will bear high manuring, and will make good returns for

the outlay. The committee are of opinion that Mr. Locke is entitled to the second premium, (of fifteen dollars.)

R. A. MERRIAM.
WM. OSBORN.
L. H. DOLE.

November 15, 1850.

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JOHN PORTER'S STATEMENT.

My meadow, which you viewed in July last, was surveyed Sept. 30, 1850, and contains two acres and ninety-five poles, including the ditches, which occupy a fraction over thirteen poles of the surface. For many years previous to my purchase in 1832, it was annually covered with water two or three feet deep from November to April, by means of a dam made at the lower end of the meadow to connect with a natural ridge of the adjacent upland. While the flowing was continued the yearly product of hay was large, averaging more than a ton to the acre, but the quality was inferior. This meadow was very wet, even in August, and all the hay had to be poled out, for it would not bear an ox without miring, upon any part of its surface. It was also very rough, abounding in hassocks, and small bushes about the size of a pipe stem, began to make their appearance. The depth of the soil, or vegetable matter, was from three to twelve feet to hard bottom. There were two ditches three or four feet wide, one on the northern, and the other on the eastern margin of the meadow, which were made to answer for the division fence, and forming a juncture near the dam, partially drained off the surplus water. In the summer of 1836 I dug two ditches three and a half feet wide by two or more deep, lengthwise of the meadow, and terminating in the ditch on the north end, thus dividing it into three nearly equal lots. From this time I ceased to flow it in the winter, and it soon became much drier; the quantity of hay decreased more than one half, with no perceptible improvement in the quality, and in one or two years the whole meadow settled nearly two feet, apparently leaving about three inches of the surface entirely detached from the vegetable deposit, or soil

below. In this situation it remained till the autumn of 1847, when I began to reclaim. Two men in ten days, with the common grub hoe and manure fork, pealed the whole top, and threw it into heaps a little larger than common sized hay cocks. This was easily accomplished, for the men would often take up a flake a yard square at once with little effort, and leave a surface as smooth as the house floor. I set fire to this topping as soon as it was dry enough to burn, but the peaty soil below ignited, and the fire was with difficulty extinguished. It was all removed to the upland, some on handbarrows, but mostly by the ox team after the ground had frozen hard enough to bear, and was used to replenish the hog and cow yards, after selling a very large quantity to my neighbors, sufficient to defray all the expenses I had thus far incurred. The first of August, 1848, I hired three robust Irishmen for one dollar and a quarter per day each, and they were to find their own board, and one of my hired men upon the farm worked with them half a month. In forty days, with wheelbarrows and a tier of plank extending half across the meadow from the adjacent bank of gravel on one side, and then from the ridge on the other, they covered the whole surface from three to four inches deep. After the middle of September I sowed three bushels of red top and three pecks of herds grass, and two men in one day raked in the seed. For the want of rain and a top dressing of manure, the grass seed made a poor show that fall. In the following March, before the ground had thawed, I purchased twelve cords of manure in my neighborhood, which was carted and spread evenly over the meadow. I then sowed twelve pounds of clover seed, and in July following I cut what was estimated by competent judges to be five tons of handsome hay, and in September two tons of rowen. The meadow was now hard and solid enough to bear the team, and the hay was all carted off without difficulty. In November last, I mixed two cords of stable manure with four cords of loam from a barn cellar I was then digging, and spread the same on about one third of the lot. In March last I spread three and a half cords of stable manure on another third, and upon the remaining third I spread one hundred and fifty bushels of leached ashes.

The hay this year has all been weighed at the town scales. The first cutting in July weighed a few pounds less than seven and a half tons, and the second in September a few pounds over three and a half tons, making eleven tons this year, and the product of the two years eighteen tons. The manure and the ashes, exclusive of the loam from the cellar, which has been put upon this land within two years, amounts to twenty cords, and including the expense of carting and spreading, has cost one hundred dollars. I paid the three Irishmen for labor one hundred and fifty dollars, and estimate the labor and board of my man at twenty dollars more, making the whole expense of reclaiming and manuring amount to two hundred and seventy dollars. From 1836 to 1848, this piece of land was worth nothing, except as a deposit of muck to increase the compost heap. The annual crop of hay would not pay the cost of harvesting. And now, from your personal inspection of this reclaimed meadow, I think you will agree with me in saying, that for pleasantness of location and convenience of access to my buildings, it can hardly be exceeded; and that at two hundred dollars per acre, which it will now sell for, it would be a better investment under good management hereafter, than any of our eight per cent Railroad Stocks.

Wenham, Oct. 5, 1850.

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## CALVIN LOCKE'S STATEMENT.

The reclaimed meadow, containing one and nine-sixteenths acres, submitted to your consideration, was in 1842 a thick alder swamp, flooded with water full three-fourths of the year, in the winter to a considerable depth. I commenced working on it in November or December of that year by cutting two ditches through the length of it, one on each side, receiving for my pay the alders growing on the margin of the same about one rod in width, without any reference to making it a mowing field, but merely to drain the ground. Before I had progressed far I became convinced of the prospective productiveness of

the soil, which is alluvial from one to two feet deep, and made a bargain to lease it for twenty years. During the winter of 1843 I cut off most of the alders, and in 1844 cut the remainder. A part of them were cut in the usual way of cutting alders for fuel; a part were taken out by one man taking hold of the clump and pulling from the man with an axe on the opposite side, while he goes round and cuts the large roots, when they will very readily come out whole. I think this far the cheapest and easiest way of getting them out. I should think I cut on the piece more than fifty loads for three cattle. A part of these I sold for from two dollars to two dollars and fifty cents a load—I might say their average value would be two dollars and twenty-five cents. In 1845 I commenced getting out the roots, first with a bush puller and then with a plough, which I think much the best instrument. I should think we spent about six days with three men and two yoke of oxen, clearing about an acre from roots and ploughing it. The roots we piled up and covered with clam shells and burnt them into lime with the roots, and then laid them out in hills, and planted potatoes on them, which went over about half an acre. The other was manured with one load of manure from the barn and two cords rock-weed mixed with stuff thrown out of the ditches. Of the three kinds of dressing used, I consider the contents of the root and shell heap the best. The potatoes grew finely, and gave promise of a good crop had it not been for the blight, which rendered them almost worthless. In 1846 I cleared the remainder of roots, and ploughed the whole, sowing that part planted with potatoes with oats, and the new piece I planted with potatoes, using about one and a half cords manure. The oats grew very rank, so as to lodge, producing a great quantity of straw, I should think more than two and a half tons, with very little grain, and the potatoes a middling crop. It was my intention to have ploughed and sowed it after the crop came off, but on account of heavy rains in fall and spring, I was not able to do it until late in May 1847. The produce of this year was a great crop of weeds with the young grass, which I nearly gave away for taking off. In 1848 I cut five and a half tons of first quality market hay when it was

weighed from the field, holding out nine thousand one hundred and ten pounds in Boston market, leaving one thousand three hundred and ninety pounds for shrinkage and feeding the teams of the hauler. In 1849 the crop amounted to eight thousand two hundred pounds when weighed from the field, and seven thousand five hundred pounds in market, falling short seven hundred pounds, of a quality a little inferior to the first, although selling as high as the average. In 1850 the weight of the crop was about four tons, remaining as yet unsold. All the dressing this land has received since it was laid down, was about ten bushels of ashes on a part of in 1848, and about fifteen bushels in 1849, and two casks of lime.

I should be glad to be more particular in my statement as to loss and gain, but general and imperfect as it is, I submit it to your consideration.

Ipswich, Sept. 25, 1850.

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## ON THE CULTURE OF THE CRANBERRY.

No entry has been made for the Society's premium for the cultivation of cranberries. But the chairman of the committee submits the following communication, in the hope that it may not be without interest, and may excite to further experiments.

The Cranberry or Oxycocus, is so called from the Gr, oxus, sour, and Kokkus, berry, on account of its acidity. It is found from the Middle States to Hudson's Bay, and perhaps farther north. The European cranberry has been found in Lynn woods, and is distinguished by its short pointed leaves. It is very common in Russia, and other countries in the north of Europe; it bears a close resemblance to the common American cranberry, but is rare in Massachusetts. The earliest description of our cranberry that I have been able to discover, is to be found in an old, quaint, and very scarce book, describing the Natural History of our country at the period of its first settlement. It was published in London in 1672, and was writ-

ten by "John Josselyn, gentleman," and was entitled "New England's Rarities, discovered in Birds, Beasts, Fishes, Serpents and Plants of that country." Josselyn, who visited New England in 1638, and gathered his materials for his New England Rarities, probably saw the cranberry in common use both by the Indians and English, at that early period of our history. Here follows Josselyn's description of this plant: "Cran Berry or Bear Berry, because Bears use much to feed upon them, is a small trayling Plant, that grows in Marshes, that are overgrown with moss; the tender Branches [which are reddish] run out in great length, lying flat on the ground, when at distances they take Root, overspreading half a score acres, sometime in small patches of about a Rod or the like; the Leaves are like Box, but greener, thick and glistening; the Blossoms are very like our English Night shade Flowers, after which, succeed the Berries, hanging by long small foot stalks, no bigger than a hair; at first they are of a pale yellow Colour, afterwards red, and as big as Cherry's, some perfectly round, others oval, all of them hollow, of a sour astringent taste; they are ripe in August and September. They are excellent for the Scurvey. They are also good to allay the furvour of hot Diseases. The English and Indians use them, by much boyling them with Sugar for sauce, to eat with their meat, and it is delicate sauce, especially for roasted mutton. Some make tarts with them, as with Goose Berries."

Such is the history and use of the cranberry in the days of the Pilgrims, written in their peculiar style, probably not twenty-five years from their landing at Plymouth. The plant, called in some parts of Maine, the "Mountain Cranberry," is used there for culinary purposes, like our common cranberry. It is a very rare plant, being as yet discovered but in one spot in Massachusetts, and that occurs in a pasture in North Danvers. It is the vaccinum vitis Idæa. L. [Cow Berry.] It can be used as the common cranberry, but is inferior to it. We have not had it a sufficient length of time under cultivation, to form an opinion of its value. The High Cranberry, or viburnum opulus, is a handsome shrub rising from six to ten feet high, and bearing an acid fruit somewhat resembling cranberries. It has been

recommended by some persons as a good substitute for the cranberry, and on that account worth cultivation, but we have not found it so, the fruit is very acid and bitter, containing a large oblong nut. It is, in our opinion, a shrub much more ornamental than useful. The cranberry can be successfully cultivated in any good soil, not absolutely dry. It prefers a moist soil, and still better a sandy peat. In the selection of plants for the purpose of cultivation, we should choose those growing in low grounds, near the upland, in preference to those found in wet, mossy meadows. We think the autumn a favourable season for transplanting the cranberry, as they can more readily be taken from low wet lands. In removing the plants, it is best to take up a sod of earth with them, carefully picking out the grass. These may be set in a bed, prepared like one for strawberries, in rows twelve or eighteen inches apart, and as the vines extend by sending out runners, they should be covered with earth to cause them to take root. Care should be taken to keep the bed free from weeds and grass. The plants of the cranberry under cultivation, need protection in winter. This, it will be recollected, they always receive in their wild state in the meadows, by the overflowing of them by water. They are best protected by covering them with the boughs of some evergreen tree or shrub. I prefer for this purpose the prostrate branches of the juniper, called by some persons ground hemlock. When this cannot be obtained, meadow hay, sea weed, or litter may be used. When the vines are covered with the boughs of some evergreen tree, the fruit can be kept on them in a very fresh and excellent state, during winter, and used as required. I was somewhat surprised to find my cranberries the past season, infested by an insect unknown to me. These, resembling a worm or maggot, were discovered in the berries when about half grown, eating out its pulp, and destroying, I should think, half of my crop. Several of the cranberries containing worms were sent to Dr. Thaddeus W. Harris, the distinguished entomologist, who, in reply, informed me that he found the insects to resemble closely the well known "apple worm" and adds, the question of their identity, however, can be settled by keeping them, till they undergo their transformations.

In closing this communication, I would say that what I have written upon the cultivation of the cranberry, has come under my own observation, and is confined to garden culture. What the cranberry would do, with its delicate fibrous or hairy root, adapted to a sandy peat or a sphagnous bog, when transplanted to a dry soil, in an open field, with nothing to protect its roots from the frosts of winter, is more than I can say. Those persons who have had much experience in the cultivation of native plants, found growing in swampy or very wet land, will have noticed that many plants will accommodate themselves to a comparatively dry soil, and the cranberry may be one of those plants. After several years experience in the garden culture of the cranberry, I can see no obstacle in the way of complete success, provided the same care and skill are bestowed upon it, that are rendered to a bed of choice and tender strawberries.

SAML. P. FOWLER.

Danvers, Nov. 6, 1850.

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## ON FRUIT TREES.

The Committee visited in the course of the season, the several orchards and plantations of trees, to which their attention was called, viz: Dr. Royal A. Merriam's, Wm. G. Lake's and Moses Pettingil's, in Topsfield, Francis Dodge's and Lewis Allen's, in Danvers, and Amos Gould's in Wenham, and others to which they were not specially invited.

The statements of the several claimants will best explain the particular quality of the orchards. The committee will add a few remarks expressive of their own impressions. But two parcels of pear trees were presented to their attention. Mr. Pettingil's trees were set in 1846, immediately after the premium was offered. Care was taken by him to obtain trees of fine quality, and of the best varieties of fruit, from Mr. Manning's nursery. They were set in a soil admirably adapted to their growth, and have since been watched with the best attention.

They have grown remarkably well, nearly all the trees being now thrifty, and in bearing condition. In the intermediate spaces between the trees, an orchard of peach trees has been cultivated at the same time, which have been highly productive of some of the best varieties of peaches that we have met. The committee were highly gratified with the success of Mr. Pettingil's experiment, and can with confidence refer to it, as a good illustration of what can be done by intelligent culture of this kind of fruit. Some half a dozen of the best varieties of pears presented at the exhibition of fruits in Salem, grew upon these trees, that have been set within the last five years. The committee are pleased to award the first premium of ten dollars to Mr. Pettingil.

Dr. Merriam exhibited to the committee some handsome pear trees, that have been cultivated with much care and attention. With the appearance of these trees they were well pleased. The committee were not aware that the number came up to what the conditions required, until they read his statement. Not being aware of this fact, they had not supposed there was any competition in the claim for the premiums offered; under this state of facts, they did not feel at liberty to award any premium the present season. When the trees are more fully grown, they will probably be more likely to arrest the attention of visiters.

The competition for the premiums offered for apple trees was greater, there being four distinct claims. The trees of Amos Gould, of Wenham, were thought by the committee to be entitled to the first premium of ten dollars. They have been cultivated for three years past with marked attention. They were selected at first from one of the best of nurseries, and from the best trees of the nursery. These are facts, in the opinion of the committee, of great importance. It may be, after a growth of ten years, ordinary trees at first, will overtake those that were more promising; but such an event is not probable. Mr. Gould's trees are in very fine condition, and are a good illustration of what can be done by careful attention.

Lewis Allen, of Danvers, to whom is awarded the second premium of eight dollars, has an orchard of a larger number of

trees, which have been cultivated with much attention, and are now in good condition. They have not been set out so long as Mr. Gould's, and have not a character so firmly established. Both of these gentlemen have selected the Baldwin apple only for their orchards. Although this apple is to be admired for its many superior qualities, still there are other good varieties, and we should prefer to have several kinds at command.

The orchard of William G. Lake, of Topsfield, was viewed by some of the committee. A part of his trees are in very fine condition. Had it not been that others viewed were deemed superior, the committee would have been pleased to have given him a higher premium. They therefore award to him the third premium of four dollars. Mr. Lake has been very successful in his cultivation of trees in his nurseries. No one can complain that he does not present a sufficient variety of fruits. If we do not mistake, he exhibits as many as fifty varieties of apples, of his own raising.

Dr. R. A. Merriam, of Topsfield, has taken much pains to lay the foundation for an orchard of about two hundred trees. He has set apart an ample enclosure for this purpose, and in a good position. Many of the trees are growing finely and promise well, others are less promising. There is great inequality in their appearance. The grand mistake, if any has been made, was in the selection of his trees in the first instance. The contrast between Dr. Merriam's and those in the other orchards viewed, is a good illustration of the necessity of care and liberality in the first selection of the trees. If the Doctor's trees, five years hence, shall be found to have overtaken in their growth, those of his competitors, then the committee will cheerfully admit their mistake in their own notions.

Some of the committee were anxious that the attention of the Trustees should be called to the importance of offering premiums for the introduction of some new variety of apple, instead of the cultivation of those now most esteemed. Instance, if any one could bring forward a new apple, that would compare with the Baldwin, the Danvers Winter Sweet, or the Hubbardston nonesuch—all of which have originated in Massachusetts

we believe within the last century,—he would be a public benefactor.

The advantages to accrue from the cultivation of the Baldwin apple, are well illustrated on the farm of Francis Dodge, of Danvers, to which the committee were invited, and by whom they have been favored with a statement of the produce of his orchard the present year. Mr. Dodge's trees, about forty-five in number, were set about twenty years since, in a field of seven acres, by the wall, thirty-five feet apart. Ever since, care has been taken to keep the land in good condition, and every thing has been done to promote their growth, without incurring any unreasonable expense. The present year, the trees have yielded him more than six barrels of fair apples to a tree, many of which sold for two dollars per barrel. The value of their produce, exclusive of the labor of gathering and taking to the market, cannot be estimated less than three hundred dollars. At most these trees cannot be estimated to occupy more than one acre of land. In what way can a farmer apply his acres to a better purpose? At the same time he brings money to himself, he carries health and comfort to all who are furnished with his apples. This is more than can be said of many other products, especially those that pass through the distillery.

The extraordinary produce of the Baldwin apple the present season is worthy of special notice. Universally have these trees borne a full crop. We have known single trees, not over thirty years old, to yield fourteen barrels, and three trees together to yield forty barrels. We know one young orchard, where the proprietor picked with his own hands forty barrels in one day.

We forbear to extend our remarks on this subject, as they may be thought not entirely within our province, nevertheless, if we could convince our farmers of the benefits to accrue to them and their families, from more assiduous attention to the cultivation of good fruit, we think a good service would be accomplished.

A. T. NEWHALL,
CHAIRMAN OF THE COMMITTEE.*

Salem, Nov. 15, 1850.

* A. T. Newhall, of Lynnfield, J. W. Proctor and Benj. Porter, of Danvers, Joshua H. Ordway, of West Newbury, Eph. Wood, of Salem.

## SUPPLEMENTARY REPORT ON FRUIT TREES.

The committee were instructed by the Trustees to take into consideration the theory, that the "chance of life in a scion is affected by the chance of life in the original seedling which began the species." It will be recollected, that it was distinctly asserted in the address before the Society in 1849, that "we cannot prolong the existence of any particular kind of fruit, by engrafting from old to young trees, beyond the natural life of the original tree, or the time it would cease to bear fruit by old age, if living." Doubts having been entertained by some, of the correctness of this assertion, it was thought to be a fair subject for inquiry. For if it be true, then before we begin to cultivate particular kinds of fruit, however superior they may be, we must inquire not only into the quality of the fruit, but as to the time when it first came into being. It being generally admitted that the age of the apple tree is about two hundred years—our oldest fruits will have to give place to those of later origin. The experience on our own shores is too limited to furnish facts to answer this inquiry in a satisfactory manner.

On looking into English books we find one of their most celebrated apples, the Golden Pippin, spoken of by Evelyn as early as 1660, as being greatly admired and much cultivated. It has continued to be so ever since. Perhaps it will be said, there is no certain evidence that the fruit now passing under this name, is a direct descendant of the original stock. It may have come from seedlings, so like the original, as to be incapable of being distinguished. This is possible, though not probable. Human life is too short, for the testimony of the same individual to be applicable to the beginning and the end of any particular variety. The culture of trees, in this country at least, has not been so scientifically and systematically pursued, as to warrant confident assertion on the subject.

The Newtown Pippin, a native of Long Island, one of the most celebrated American apples, has been known and cultivated for one hundred and fifty years, at least. The original stock has been dead fifty years or more. But still this variety is now cultivated as extensively as ever, without any indica-

tions of old age. If THREE FOURTHS OF ITS PERIOD is past and gone, might we not expect some indications of approaching decay?

The Baldwin, the most popular and most valuable of all our Massachusetts apples, has now been known for more than one hundred years. Never was it in more vigorous condition than the present season,—yielding more than all other sorts combined. Whether the original tree, that was MARKED BY THE WOODPECKER, at Wilmington, County of Middlesex, and taken into the care of Col. Baldwin, is still living, we are not advised; but if it be not, and has already gone down fully ripe, if this theory be true, it is important to cultivators to be distinctly informed, before they set out trees, whose days are numbered. When we took our pen in hand, we hoped to have been able to throw some light on this subject, but the more we investigate, the less confident are our impressions.* We will not presume to deny the assertion of our Chairman, who brought it forward, nor can we yield entire assent to the theory. In considering the causes of the decline, or running out, of particular kinds of fruit, the exhaustion of the fruit bearing

* The oldest fruit tree we have ever seen, and probably the oldest to be found in New England, whose history can be authentically traced, is the Endicott Pear Tree, (so called,) on the farm now owned by one of the committee. It can be certainly traced two hundred and twenty years. Many others were then set, in what was called the orchard, all of which are now gone. On the same farm, there are now many trees, bearing what is called the Endicott apple, probably produced by scions taken from the same orchard. The history of the apple trees is less certainly known than the pear tree. Eighty years since the pear tree is remembered to have been quite large and productive. An accident then happened to a boy, who fell from its upper branches to the ground, who *sixty years* afterwards, was accustomed to speak of his adventure with much sensibility. This pear tree has made wood the present season, on its principal branches, from *six* to *twelve inches*. These scions have a healthy and vigorous appearance, and offer an opportunity to those, who believe the variety can be prolonged another *hundred years*, to test the experiment; as did the philosopher, who having heard that a crow would live *a hundred years*, bought one to try the experiment.

Apples were exhibited at the show in Salem, this year, that grew on a tree in *Marshfield*, Plymouth County, said to be two hundred years old. Their appearance was fair and sound. They were too hard to be tasted. Pears were exhibited that grew on a tree in Salem two hundred and ten years old.

qualities in the soil, is to be regarded. From our earliest years, we have heard the remark, that a young orchard will not flourish well, where an old orchard has been. Such sayings do not become common, without some foundation,—although those who use them may not be able to give a reason for the faith that is in them. Perhaps, as a general thing, it may be the soil and not the fruit, that declines. Still we think there are cases, in which decline is peculiar to, or inherent in, the particular variety. This is probably true of the Nourse Sweeting, so distinctly recollected by the chairman in his youth. Calling to mind the recollection of many varieties of apples that were cultivated and much esteemed in our youth, which are not now to be found, at first thought, seems to corroborate the theory. Nevertheless, we have no such certain data respecting them, as will warant definite conclusions. Mr. Newhall showed the committee trees on his own farm, that were grafted sixty years since under his own observation, scions from which he has attempted to propagate, without success, from which experiments he has confidence in his views, which are distinctly expressed in his letter hereunto annexed.

For the Committee. J. W. PROCTOR.

Danvers, Nov. 20, 1850.

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ASA T. NEWHALL'S LETTER.

To J. W. Proctor.

Dear Sir,—Upon the subject of decay by old age, and final extinction of varieties of the apple, and the necessity of raising new varieties from the seed, I can add but little to what I have already said. But, in compliance with your request, and desirous as I am that the subject should be fully investigated, that we may arrive at such conclusion as may in some measure assist orchardists to pursue a course that will ensure longevity to their orchards, I will state something of the experience and observation I have had the past year.

I have carefully noticed the different varieties of soil and

culture upon which the trees stand, on which I have engrafted old varieties of the apple, and I find that the same kinds of fruit bear the same marks of old age, notwithstanding the advantage some of them have had of soil and culture. Most of the stocks on which these old kinds are now growing, or rather decaying, appear to be vigorous, and in many instances to send out new shoots, but unless a new top can be grown from the trunk, it must finally expire, as does man in youth, or middle age, by diseased lungs, when all other parts of the system are perfect.

The seed for a nursery ought not to be taken from grafted fruit, but from a seedling, that has arrived at maturity, or to a state of strength and vigor, which is in accordance with the laws of nature,—for the progeny of early youth or old age are inferior to the productions of middle age.

That our orchards are deteriorating very fast, in consequence of our anxiety to obtain an early harvest of fruit, by budding or engrafting, must be apparent; in consequence of which our orchards bear the marks of premature old age, and there seems to me to be no alternative, but to raise new varieties from the seed.

I think there can be no doubt of the utility of offering large premiums for new varieties of seedlings. If one thousand dollars were offered for six, eight, or ten kinds, to be paid in ten or twelve years hence, that should be equal or nearly so to the same number of the best kinds we now have, I would be bound to pay the premiums, if I might have the profits to be derived from the buds or grafts of those trees for ten years.

November 15, 1850.

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AMOS GOULD'S STATEMENT.

I enter for premium seventy-nine apple trees, set out on my premises three years ago this fall; seventy-three of the trees being in one enclosure, and the other six in an adjoining lot. They were procured all at the same time, nearly all of which

are Baldwins, from the nursery of Allen W. Dodge, in Hamilton, grown on light soil, and not forced by high culture. When transplanted, they were two years old from the bud, and consequently are now five years from the bud. A part of them were set in land that had been cultivated two years, and a part on land broken up that fall. This last named land has been kept under cultivation to the present time, and the trees upon it have made a much better growth than those upon the other land, which was laid down to grass the following spring, although it was dug round the trees the two seasons after. All of the land was this year ploughed and planted, expressly for the benefit of the trees, so well convinced am I that in this way the thrift of trees is best promoted.

The trees were set out with the utmost care, occupying two men for two days, the holes having been dug previously. About three pecks of compost manure were placed round the trees after being set, and the same quantity has been applied each fall since. Early in the spring this manure has been dug in, and about a pint of air slacked lime strewed over the surface of the ground near the tree. In June I have applied about a quart of ashes near the trunk of the trees, to prevent the depredations of the borer, which I think has been effectual. I have also, early in June of each year, washed the trees with a composition of about equal parts of lime, clay and cow manure, well worked together, the effect of which is to keep the trees smooth and free from moss and insects. This annual washing I have practised for some years, and shall continue to practise, as long as I own a tree—its beneficial effects being to me so apparent.

Wenham, Oct. 7, 1850.

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LEWIS ALLEN'S STATEMENT.

My orchard of young apple trees contains two hundred Baldwins, one hundred and sixty of them in one enclosure, the remainder in a lot adjoining, with other varieties. One hundred of these trees were set in the spring of 1848, the other hundred

were set in the spring of 1849. They were selected from several nurseries, always taking care to get trees about the same size, and the fairest in appearance. They were generally two or three years from the bud. At the time of setting, holes were dug four feet square, the top soil thrown on one side, and the sub soil on another; the hole was then partially filled with soil, to the depth of one foot, the tree was then inserted, and filled about with soil, and the sub soil taken out was spread around. No other manure was applied to the trees, except the general dressing upon the ground. The trees were set about thirty-three feet apart each way, covering about two acres.

The land is a gravelly loam, and previous to the year 1844, it had been a common pasture, when it was ploughed to kill the wood-wax, with which it was fully covered. Since that time it has been under cultivation with the various kinds of hoed crops, except that one part of the lot was sowed with barley the last season. Where the barley grew, the trees did not grow. I am satisfied the crop opearted unfavorably upon the trees. Eleven of the trees among the barley died; I have supplied their places with others.

Most of the trees have made a handsome growth of wood, and now have a smooth bark, and a healthy, vigorous appearance. I consider them fairly rooted, and with the ground fairly manured, I have reason to believe, in a few years they will be in condition to well reward all expense of cultivation and use of land. I did not think of asking your attention to these trees the present season, until requested to do so.

Danvers, Oct. 15, 1850.

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WILLIAM G. LAKE'S STATEMENT.

My orchard, offered for your consideration, consists of seven hundred apple trees, standing upon about seven acres of land. They were all set out in the years of 1848, '49 and '50, about an equal number each year. They were all two years upon the bud when set, and the most unsaleable trees in my nurse-

ry, with the exception of one hundred and seventy-five, which were as good as any in my nursery at that time. The ground has been ploughed and planted each year. The other orchard contains eighty trees, set out in the fall of 1844; two shovels full of manure was applied to each tree in the fall.

The following are the kinds of fruit:—For winter—Northern Spy, Lady Sweeting, Baldwin, Greening, Roxbury Russett, Danvers Winter Sweet. For fall—Hubbardston Nonsuch, Fall Harvey, Kilham Hill, Gravenstein, Porter, Aunt Hannah, Minister, Yellow Bellflower, Luscomb, Alexander, Dutch Codlin, Maiden's Blush,—with several other kinds of new fruit, which I have not fairly tested.

Topsfield, Oct. 9, 1850.

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MOSES PETTINGIL'S STATEMENT.

I offer for the Society's premium, my orchard of Pear trees, which consists of thirty-six trees, set in the spring of 1846. The land on which they stand is a strong, dark loam, with a clayey sub soil. It had been cultivated for two years, and was in a good state for transplanting. The varieties are as follows: Seckel, Beurre Bosc, Winter Nelis, St. Ghislain, Summer Franc Real, Golden Beurre of Bilboa, Pope's Russet, Dearborn's Seedling, and Pound Pear. In the spring of 1846 I dug the holes for the trees, twenty-five by thirty feet apart. I made them eighteen inches in depth, and four feet broad, and mixed with the soil some manure to each hole. I then set out the trees; they all lived, and made wood the first year from four to twelve inches. In the autumn of 1846, '47 and 48, I put around them half a bushel of barn manure to each tree, and in 1849 I manured with muscle mud, and in the spring of each year I dug the manure into the ground. The trees have made good growth, and the present season from twelve to forty inches.

In 1846 I planted the land with a peach nursery, and raised a good crop of trees that I have sold, leaving seventy as standards, from which I have received a good crop of fruit the past

two years. I think they are a protection to the pear trees. Of the diseases of the pear tree I have had but little knowledge; I have experienced the frozen sap blight, but as for a remedy, I leave it for others to propose one.

Topsfield, Oct. 16, 1850.

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ROYAL A. MERRIAM'S STATEMENT.

The orchard of young fruit trees which I offer for premium, was set out in 1848, this being the third year from planting out, the fifth from the bud, and the seventh from the seed. The lot of ground contains about two and a half acres, surrounded by stone wall, the borders having older trees, which by grafting, have been renovated, four years since. Nothing is allowed to feed upon it; it has been improved as mowing and tillage land for forty or fifty years, has a southwesterly aspect of a hill side, the soil a deep black loam, with a full supply of wall stones on the surface.

Two hundred young trees stand on about two acres; half from Lake's nursery, (not the largest growth.) and the other half were natural trees, planted but not worked, all of the same age. The natural trees were grafted last June; the whole in the lot intended for the Baldwin apple, excepting some failures, which have been supplied with the Danvers Winter Sweet and Hubbardston Nonsuch. As I intend not to admit any feeding off the ground, I have allowed the trees to branch out low.

The ground was prepared, by ploughing, in the autumn of 1847, in strips of five furrows twenty-two feet apart, and the trees stand in these strips, about the same distance apart. A square of four to five feet was dug the next spring, one foot deep and taken out, and six inches more loosened up in the sub soil. One bushel of pulverized meadow muck was put into the pit mixed with the top soil, and the tree placed in the hole with the roots nicely spread out and covered, adding about two shovels of straw manure near the surface, and covering lightly with the remaining sub soil. The ground, from four to six feet square about the tree, has been cultivated and kept free

from grass or weeds, hoeing three times a year. Since planting out in 1848, the trees have been manured once by about two shovels of well rotted manure to each tree.

My object in using unworked trees for a part of the ground, is an experiment. It has been advanced by some pomologists, that the tap root was necessary for the perfection and longevity of the tree. Although we could not get the whole of this root, we were able to get from one to two feet of it. The seeds of these natural trees were planted in earth that had been moved, (the bank of the turnpike,) and the tap root had penetrated to the depth of three or four feet into the bank, with few lateral fibres, and after transplanting, in removing some ordinary trees, I found that the lower end of the tap had started again downwards.

I think there is little doubt but fruit will be taken from these trees in the course of three or four years; the natural trees may be some later, but I think not much. The grafter, who has made grafting and pruning his business for fifteen years, and who has laid up many good ideas upon the working of trees, thought he should be as willing to take the chance of the natural as the nursery trees.

Some Pear trees, set out and grafted since 1846, about thirty in number, are likewise presented to your notice for premium. These trees were taken from the forest, in a perfectly wild state, of different sizes and ages. They were trimmed root and branch of all their superfluous wood, viz. roots that were injured, and very long roots shortened, and were carefully set in a garden soil and cultivated with the garden, and generally grafted the second year after transplanting. They are now far in advance of nursery trees which I set out in 1844 in the same soil. They were of different sizes, several being ten feet high, and all promising. They were set from ten to fifteen feet apart, in a part of my garden where formerly was a blacksmith's shop. Several of them the present season have made from two to three feet of wood, none less than one foot.

It was remarked by one of the committee, when viewing the trees, that the ground was very suitable for trees. Whether the ferruginous ingredients of the soil, or the charcoal, (which

was mostly used in the days of the blacksmith's shop,) have any special influence, may be a question of some importance, or whether the removal from an uncultivated to a cultivated soil, has had a favorable effect, I will leave for the more skilled to determine.

Topsfield, Sept. 1850.

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FRANCIS DODGE'S STATEMENT.

I offer for your inspection forty-three Baldwin apple trees, enclosed in one field containing between seven and eight acres, on my farm in Danvers, being part of a row around the whole field, and all the bearing ones excepting four Kilham Hill trees. They are thirty-five feet apart, and twelve feet from the wall. The other trees in the row are younger, and have been set to fill vacancies at various times within the last ten years. The field on which the trees stand is what might be termed a run, and was cleared twenty-three years ago. There is a covered drain in the field, running the entire length, about in the centre, the ground rising on both sides of it. The ground also rises from both ends, making the highest point of land about midway of the piece, the water running from the centre to both ends of the field all the year. The land on the south side of the drain is of a loamy character, that on the north is rocky, wetter, and more inclined to clay. The trees have done the best on the north side, and the fruit has been larger. The trees were set in the fall of 1828, and the land laid down the following spring. I have no knowledge of the mode of cultivation previous to 1840, as the field was not in my possession until that time.

That spring they were pruned, and have been every successive spring since. In pruning them we have endeavored to keep a well balanced head, cutting off all riders and suckers. In the spring of 1843 the land under the trees was ploughed as far as the longest limb extended, and has been ploughed both fall and spring ever since, putting on a coat of manure of about

five cords to the acre in the spring, and ploughing in immediately, being careful at each time of ploughing not to injure the roots. The two first years I planted the ground with hoed crops, but since that time the ground has been sown with some small grain in the bearing years, and planted with hoed crops every other year. By this method the windfalls are kept from the ground, and the apples are not so liable to bruise from falling. For the last ten years the trees have been scraped and washed with potash water or strong soap suds, every other year. The crop of fruit has been as follows:—In 1840 and '42 there were a dozen barrels each year; in 1844 there were fifty barrels of picked apples; in 1846 one hundred barrels; in 1848 one hundred and twenty-five barrels picked, and thirty-five of good windfalls that brought in market from a dollar to a dollar and a quarter per barrel, also a large quantity of poor apples that were sold for cider apples. The apples that year in this county were unusually wormy. This year there were two hundred and sixty-seven barrels of picked apples, and thirty barrels of good windfalls.

Danvers, Nov. 7, 1850.

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## JOSHUA H. ORDWAY'S LETTER.

The following letter, that came to hand after the report was sent to press, is deemed sufficiently valuable to be published entire.

West Newbury, Nov. 23, 1850.

J. W. Proctor, Esq.

Dear Sir,—Yours of the 16th inst. is before me. You rightly understood my suggestion, at Salem, in regard to the importance of raising new varieties of fruit. They should be raised from the seed of fruit,—not from highly cultivated kinds,—but from nature's healthy seedling trees.

I can see no special benefit to accrue, from continuing premiums for pear or apple orchards, that are already set out with existing old varieties. They will grow just as well without aid from the Society, as with.

I am aware that most pomologists are of the opinion that trees may be propagated indefinitely by budding or grafting, and without examination have adopted that theory, and thus foreign varieties have been extensively cultivated, to the neglect of new varieties of our own.

Nature has fixed laws, is ever true to them, and cannot be crowded off the track. If this theory is the law of nature, all existing varieties of fruit must in their own time cease to exist. You will then understand why I consider it of so much importance to endeavor to introduce new and improved varieties.

I am of opinion that the pear has been cultivated so long by suckers, from old trees, that it may possibly become extinct. The old trees have lost their vitality, and cannot transmit life to their seed. This seems to me the reason why we have so many failures in pear seedlings. I seldom see a young pear tree, they are little old ones, just ready to die.

You will make such use of these hasty suggestions, as you deem best calculated to advance the culture of new and improved varieties of fruits.

Respectfully yours. JOSHUA H. ORDWAY.

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## ON FRUIT.

The Committeee Report, that the exhibition of Fruits was this year united with that of the Essex Institute, under whose judicious direction the arrangements for the display were made, and an unusually satisfactory exhibition secured. The committee feel warranted in saying, that this show has not only been superior to any previously made by the Society, but that it has been fully equal to, if it has not surpassed all similar exhibitions in the State ; this comparison particularly applies to the show of Pears. Without further remark, we proceed in behalf of this society to award the usual gratuities.

To Robert Manning, W. G. Lake, Charles F. Putnam, Moses Pettingil, and J. M. Ives, two dollars each. John C. Lee, three dollars. Ephraim Brown, John F. Allen, Ephraim Emerton, and J. S. Cabot, one dollar and fifty cents. To Andrew

Lackey, one dollar and twenty-five cents. To S. Driver, James Upton, Augustus D. Rogers, James Eustis, and Ephraim Woods, one dollar each. To David Roberts, John Bertram, N. B. Mansfield, E. R. Mudge, and Samuel C. Pitman, seventy-five cents each. To J. H. Nichols, Wm. Stearns, Winthrop Sargent, B. H. Silsbee, W. D. Pickman, and George W. Gage, fifty cents each. To J. H. Phippen, Geo. Andrews, Ezra Dodge, Andrew Dodge, W. C. Barton, Samuel Kemp, John Pratt, Wm. Sawyer, John K. Poor, Aug. T. Wellman, Henry Wheatland, J. A. Goldthwait, Samuel Sawyer, M. L. Atkinson, F. W. Tuttle, Thomas Dixson, Rufus Slocum, Samuel T. Huse, and N. B. Perkins, twenty-five cents each.

The committee of the Essex Institute have prepared a detailed report or catalogue of the fruit shown, which is inserted in the Transactions. The Society, by a vote of its Trustees, requested your committee to select from this catalogue a list of such varieties of Pears which in their judgment are the most desirable for general culture, to be appended to this report. Having prepared a list of twenty-five varieties, all of which have already been well tested in this vicinity, they submit them to the Society. Viz:

Summer Pears—Rostiezer, a German variety, of the size and flavor of the Seckel; Bloodgood, fine native fruit, requiring a warm and rather dry soil.

Autumn Pears—Harvard, (native fruit; Dix, (do.); Seckel, (do.); Heathcote, (do.); Fulton, (do.) a great and constant bearer; Lawrence, (do.); Beurre Bosc; Flemish Beauty; Urbaniste; Bonne Louise de Jersey, good bearer upon the Pear stock, finer upon the Quince. The above require a strong, rich and tenacious soil, particularly the Dix and Heathcote; Bartlett; Andrews, (native fruit); Buffum, (do.); Golden Beurre of Bilboa; Belle Lucrative; Cushing, (native); Long Green; Paradise of Autumn. These sorts flourish well on a light soil well manured, and the fruit is generally of a higher flavor than when grown upon a strong clay or retentive loam.

Winter Eating Pears—Winter Nelis, this is decidedly the finest early winter pear known to us; Lewis, a native fruit of fine flavor, and the tree bears annually a good crop.

Cooking Pears—Vicar of Winkfield, a fine large fruit of second quality for eating, but still one of the most profitable pears for market,—it is a good bearer upon the quince or pear stock, the fruit is larger when grown upon a strong, rich and rather moist soil; Catillac; Black Pear of Worcester.

The Winter Nelis and Seckel fruit finely when grafted upon the tops of large pear trees. The Dix and Harvard are a long time in coming into a bearing state when budded upon young stocks; we should recomend these varieties to be placed upon old and well established thrifty stocks.

Not more than one-fifth of all the newly imported varieties of pears are worthy of cultivation; many of the new sorts sent here from Europe as fruit of the first order, when brought into bearing here have proved worthless, although many of them were beautiful in appearance.

For the Committee. JOHN M. IVES.

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## ON GRAIN CROPS.

There was but one application for the premium on Wheat, that of Henry Poor, of North Andover, he having raised twenty-five and a half bushels of white flint winter wheat upon one acre of land. The committee award to him the premium of eight dollars.

The experience of Mr. Poor, and others in that part of the county, for a few years past, in growing wheat, leads us to think that winter wheat may again become an important crop for us to raise. Why it is that wheat and rye do not blight so much now as they did ten years ago, we cannot tell. We have seen the lofty Buttonwood tree wither and die without any apparent cause; the potato, until within a few years one of our surest crops, has now become uncertain,—and we know not why. We can only say that in the blight and decay of our crops we can see the effects produced, while the cause remains as yet invisible to human eyes, and inscrutable to human science. If, upon farther trial, it is found that wheat does not

blight as it did in former years, we think it will be well for the farmers of this county to turn their attention more to this crop.

There were two claimants for the premium on Rye, viz: Adino Page, on the town farm in Danvers, and John S. Hubbard, on the town farm in Newbury. Mr. Hubbard raised on one acre thirty-two and a half bushels of rye. Mr. Page raised on four acres one hundred and thirty-five bushels, making thirty-three and three-fourths bushels per acre. The committee award to Mr. Page the premium of eight dollars. From this experiment we see that when a liberal dressing of compost manure is applied to poor and gravelly soils, a good crop of rye may be obtained from them; it is not so liable to be winter killed on such soils as upon a strong and clayey soil, and it usually ripens before the dry weather affects it. The high price which the straw sells for in some markets, adds much to its value.

There was but one entry for the premium on Indian Corn, that of Joshua Foss, of Byfield. This crop was not so large as has often been raised in this county, but the committee think if the season had been favourable for the growth of corn, this would have been as large as any to which the Society's premium was ever awarded. The committee are of the opinion that by planting in rows but one way, and making the hills but a little distance apart the other way, more corn can be raised on an acre than when it is put in rows each way far enough apart to use the cultivator. But before recommending this mode of planting, they would advise all to count the extra cost of hoeing. The committee award to Mr. Foss the premium of eight dollars. WM. R. PUTNAM, Chairman.

Danvers, Nov. 15, 1850.

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HENRY POOR'S STATEMENT.

The specimens of winter wheat are the growth and product of my farm the present year. The sample of white flint I present for premium, having obtained twenty-five and a half bush-

els from one acre, and from one and a half bushels sowing. My soil is a dark brown loam—clay subsoil. I have also tried an experiment of two varieties of Chili wheat, (see samples,) which promise well, from the fact that the heads are well filled, and berry of extra size. It is a bearded grain, produces less straw than the white flint or banner wheat. Having a few quarts now growing, I hope to be able to test its value another year, and report. Dr. C. T. Jackson pronounces it a valuable grain, from the fact that its glutinous or oily substance far exceeds the white flint, that being principally composed of starch.

I also sowed two quarts of "Banner wheat," (Kloss blue stem,) the product was thirty-three quarts. This variety appears to be the same as the White flint—I think it a superior variety. It is quite common to find scatterings of rye mixed with the wheat; as rye runs up and heads out earlier than wheat, I take the precaution to go through the field and cut off the heads. Winter wheat also makes chess grass, which is an annual, and dies out with the grain; the seed resembles dog grass, (or twitch grass.) One of our best farmers was deterred from sowing wheat this autumn, after purchasing his seed, by seeing chess seed, which he took to be dog grass.

My practice has been to plough in green sward if possible, after a hay crop has been taken off. The stubble and grass roots are of as much value to turn in, as an ordinary dressing of manure. I spread manure and twenty or thirty bushels leached ashes to the acre, and cultivate them in with the grain; leached ashes cost six and a quarter cents the bushel. I have used air slacked lime—ten or twelve casks to the acre. I have also raised thirty bushels of wheat to the acre WITHOUT ashes or lime. Gypsum would doubtless be good, where it is appropriate to the soil, but as good barn cellar manures contain all the necessary elements, properly composted, for producing ANY CROP, I doubt much the necessity of other substances to effect that object.

A good corn soil will give good wheat; the higher the dressing the better the crop. I roll after cultivating in, and also roll again in the spring; this packs the roots and branches the

grain. PROFIT is the great desideratum in all business pursuits. My wheat yielded me two dollars and fifty cents per bushel, equal to sixty-three dollars and seventy-five cents per acre, to say nothing about the straw, which is worth ten dollars more. The farmer can make his own estimates as regards expenses,—say one and a half bushels seed, fifteen cart loads ordinary manure, twenty bushels ashes at six and a quarter cents. Add to this ploughing, harrowing, harvesting, threshing, &c., (and you will bear in mind it requires no more labor to produce this crop than any other of the small grains,) and I think you will be satisfied that more value is here obtained than in any other grain crop.

Five years ago I sent a barrel of wheat, (my first crop,) to the Kennebeck, (Waterville.) It has gradually been "taking root," and at the present moment thousands of acres of green wheat fields are the only spots of verdure that have bidden defiance to the scathing frosts of autumn in that section. So great has been the wheat fever in Maine, that choice seed, (grown hereabouts,) would have commanded five dollars per bushel. This is not an exaggeration—I have it from good authority.

In the outset I intended to have been brief, but I feel that my story is but half told, and I would close by respectfully suggesting to farmers the importance of stopping their "FLOUR BILLS," by drawing from their own farms the very bread which a kind providence had designed for their comfort.

North Andover, Sept. 1850.

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### ADINO PAGE'S STATEMENT.

Perceiving that a premium is offered, "for the best conducted experiment in the cultivation of Rye," I beg leave to submit the following facts, relating to the cultivation of this crop, on the town farm in Danvers.

The field contained four acres; the produce was one hundred and thirty-five bushels, weighing fifty-seven pounds to the

bushel. The grain was plump, clean, and of as good quality as any I have seen. It was sown in the autumn of 1849, by Mr. Hathaway, my predecessor on the farm. His manner of cultivation is particularly specified in his statement of 1848, published on page thirty-eight of the Transactions of that year. Had it occurred to me to present this crop to your notice, before it was gathered, I have no doubt one acre could have been selected in the field that would have yielded more than forty bushels. I state the facts as they are, not so much to obtain a premium, as to show what such land may be made to produce, by full manuring and thorough culture. On this farm, which is a hard gravelly soil, a large number of hogs are constantly kept, and employed in the making of manure. The yard in which they are penned is constantly supplied with mud from the meadows on the farm, and the offal from the slaughter houses of the town. In this way there are annually made between two and three hundred loads of manure, a full coating of which is applied to all the cultivated fields of the farm. It is the practice on this farm to plough at all times with two pair of cattle, and a large size plough. These facts are mentioned as explanatory of the crop produced, especially as the soil is of ordinary quality. I also present a specimen of the grain for your inspection.

Danvers, Sept. 21, 1850.

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JOSHUA FOSS'S STATEMENT.

I offer for inspection a piece of land containing one acre, from which I have harvested one hundred and eighty-six bushels of ears of corn. Planted from the 10th to the 12th of May —land a dark loam, with light sub-soil. Planted in 1849 with corn—in the spring of the year it was broken up, and manured in the hole with about fifteen loads to the acre. In the spring of 1850 there were spread on about thirty loads of manure, containing about thirty bushels to the load, and about sixteen loads dropped in the hole. The corn was planted three feet

between the rows by two and a half between hills. At the second hoeing it was thinned out, leaving from two to three stalks in a hill, and at each hoeing the ground was kept as nearly level as possible. Stalks cut about the 15th of September, and all the suckers carefully taken off. The corn was harvested from the 20th to the 25th of October.

The following is the amount of labor done the present season upon this crop:—Two days work of two men and one yoke of oxen; four days hauling manure and dropping in the hill, with one yoke of oxen; ploughing and harrowing, one man and one yoke of oxen one and a quarter days; man and horse four hours furrowing; one man and a boy one and a half days planting; one man and a boy five hours cultivating; hoeing the first time, four days; one man and a boy cultivating the second time, four and a half hours; hoeing the second time, two days work; cutting and binding stalks, about four days work; harvesting the same, about six days work.

Nov. 12th, shelled two bushels of ears, and found the yield to be one bushel and one peck.

Byfield, Nov. 15, 1850.

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## ON ROOT CROPS.

The committee have endeavored, as far as in their power, to awaken attention to this subject, and to induce cultivators to bring forward the results of their labors. In some instances they have obtained these results, as a voluntary offering, in others they have presumed to intrude, in the hope of DIGGING UP SOME ROOTS, worthy of preservation. They had hoped to have obtained accounts of the culture of each of the crops of this kind commonly cultivated in this vicinity, but in regard to some they have been disappointed. To begin with that, which has herefofore been noticed by them more distinctly than any other—the ONION—they have several statements, drawn with much care, and which will be appended hereto,

condensing the facts necessary to guide in this cultivation. The committee saw the crops mentioned in these statements in the field, as well as those of many other cultivators, and have entire confidence that the facts stated in relation thereto, are worthy of entire reliance. The onion crop in this vicinity was never better than the present year—yielding from one and a half to three hundred barrels per acre, of a value not less than one dollar per barrel. When it is taken into view that the land, labor, and expense of this cultivation can be fairly met for one hundred dollars an acre, it must be apparent that labor thus applied is well rewarded. We are aware that some cultivators are inclined to underrate their crops and overrate their labor,—possibly that they may continue to monopolize the benefits. The committee have no such feeling. They know that in some seasons there are blights that cut the crop off entirely, but generally it is otherwise, and they still speak with confidence in favor of this crop.

The largest produce reported to them, was that of Lyman Mason, of Beverly, six hundred and sixty-nine bushels on one hundred and thirty rods of land, or four and three eighths bushels per rod. The next largest produce reported to them, was that of Daniel Buxton, Jr., of Danvers, four hundred and forty-eight bushels on one hundred and five rods of land, or four and two eighths bushels per rod. The next, by Mr. Proctor, of Danvers, four bushels per rod. Mr. King, Mr Bushby, Mr. Griffin, and several others, in Danvers, whose fields they saw, raised about this amount. Taking all things into view, they saw no crop equal to that of Daniel Buxton, Jr., and therefore they award to him the Society's premium, "for the best conducted experiment in the raising of onions," six dollars.

As to the cultivation of the CARROT, the committee have been disappointed in their expectations. They had hoped to have ascertained some facts, tending to settle some questions, on which there appears to be a difference of opinion. Such as, whether or not, the carrot can be advantageously cultivated several years in succession, on the same land? It is said, by the best authority in the county of Worcester, that it has been so cultivated seven years successively, with good crops.

Such has not been the general experience by the cultivators in Essex. In the hope of throwing light on this question, Francis Dodge, of Danvers, who the last year obtained the Society's premium, was requested to plant the same land with carrots. This he did, but they came up so thin, that during the first part of the season he had little hope of a middling crop. But they continued to grow and almost made up in SIZE what was wanting in NUMBERS,—he estimated the produce at twenty-three tons to the acre, and thought if they had come up as he intended they should, his crop would have been as good as he ever raised. This fact is rather against our preconceived notions, but we state it as given, our purpose being to ascertain facts, and not to establish a particular theory.

We accidentally happened to be on the ground of John Stone, Jr., of Marblehead, while he was gathering his carrots, and complained to him that he had not asked the attention of the committee to his crop. He said they came up so badly, that he should be ashamed to speak of them. We saw among them some carrots that were as much as sixteen inches in circumference and twenty-four inches long, and which would weigh six pounds or more. Mr. Stone estimated his crop at twenty tons or upwards to the acre, and he is not the man to overstate.

On Mr. Mason's ground we saw a luxuriant field of carrots, of the produce of which we should have been pleased to have been informed, but as we are not we cannot say more.

On the land of Henry King, of Danvers, we saw a beautiful field of carrots, up well, and enough of them,—but when we inquired the result, we were told a blight came upon them, the leaves turned yellow,—and further our informant said not. The same in substance, was the result of our inquiries of several other cultivators of the carrot crop.

Mr. Ware, of the committee, continues to entertain a favorable opinion of the cultivation of the carrot, as will be seen in the letter annexed.

Not having any statement of the culture of carrots the present season, we have given the above facts that came within our own observation, that some idea may be formed how the carrot grows, comparatively with other crops.

As to BEETS, the attention of the committee has been called to one claim only, that of Benjamin Rogers, of Andover, for Mangel-wurtzel. It was seen only by Mr. Batchelder, of the committee, who was prevented by indisposition from being present at their final meeting. If the crop proves as good as it promised to be, Mr. Rogers will be entitled to the Society's premium. Although the beet is a valuable article for the feed of animals, it does not seem to be very generally cultivated. No field of half an acre together has come within our observation. This fact argues strongly against its good reputation among the farmers. If it is really good, their cattle will bear testimony to its value. Their evidence is worth more than any chemical analysis.

As to TURNIPS, they are fine things to talk about, but with us it is talk, and little else. We have seen several fields of an acre or more, but no one has been kind enough to tell us the yield. Perhaps they have not yet been pulled. Whether they have or not, we cannot say much in their favor. We have supposed they were easily raised, and worth but little, comparatively, when grown. It may be otherwise.

As to the POTATO—the root of roots, by way of emphasis,—the accompaniment of every abode, from the lowest hovel to the highest palace, what shall be said? To expect a claim for cultivation or produce, would be entirely out of the question. So indispensable is this vegetable deemed for the sustenance and comfort of man, that every one still continues more or less of their cultivation, in the hope that their own field may by chance escape the devastating influence. What this is, we are not prepared to say. And although so many solutions and explanations have been put forward, of the cause of the decay or failure of the potato, none has come to our knowledge worthy of confidence.

A communication from Joseph Snelling, Jr., of Methuen, addressed to the chairman of the committee, is appended to this report as worthy of publication. It indicates a good degree of attention to the subject, and may be the means of awakening the attention of others. In this way alone may a remedy be hoped. That some soils are more favorable to the growth of

sound potatos than others, cannot be doubted; and when the chemical constituents that favor such a growth shall be ascertained, possibly combinations of soil may be formed that shall ensure successful culture.

On the grounds of Lyman Mason, near West Beach, in Beverly, the attention of the committee was called to a field of CABBAGES, containing about one and a half acres, the handsomest they ever saw. It was level land, a loamy soil, had been in grass, ploughed the eighth of May, about eight inches deep, harrowed, furrowed in rows three and a half feet apart, and manured with a mixture of barn manure and leached ashes, applying four cords to the acre, well mixed, placed in the rows. The seed was planted in hills, about the 20th of June. When grown sufficiently large to hoe, they were thinned to one in a hill, and the vacant hills were supplied by transplanting, so that the growth was uniform throughout the field. When we saw the field, the proprietor challenged us to find a missing plant, or one on which a head would not be perfectly formed. The whole were as near alike as so many peas. From this field seven thousand five hundred and twenty have been sold for sixty cents a dozen; one fourth part of the cabbages are still in the field,—this would make nine thousand on the lot, or six thousand to the acre, which at sixty cents per dozen, would make the produce amount to three hundred dollars per acre. These facts are furnished the committee by Mr. Aaron Dodge, who ascertained them by conversation with Mr. Mason. Mr. Mason is one of those cultivators who has very little respect for book knowledge, and consequently is not free to communicate. The committee have so much regard for his culture, as to recommend a gratuity of six dollars, equal to the highest premium for any root crop. Having discoursed so long, like other preachers, we will close by a few practical remarks.

1st. To succeed in Root culture, a full supply of manure must be secured, well mixed, and in good condition to mingle with the soil.

2d. The land must be ploughed deep, and completely pulverized.

3d. Weeds must not be suffered to grow. And although we have seen some fields of large crops, with the weeds over-

topping the plants, by reason of superabundance of moisture and manure, still, as a general thing, where weeds abound other crops will not.

4th. Careful attention is required to obtain good seed, to distribute it at the right time, and in proper position.

5th. Let so many and no more plants remain, as will obtain a perfect growth.

6th. Guard against the approach of all insects, and check their progress at the first onset.

The awards recommended are as follows:

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|---|---|
| To Daniel Buxton, Jr., of Danvers, for onions, - | $6 00 |
| " Lyman Mason, of Beverly, for Cabbages, - - | 6 00 |
| " Benjamin Rogers, of Andover, for Mangel wurtzel, | 6 00 |

For the Committee.* J. W. PROCTOR, Chairman.

Salem, Nov. 15, 1850.

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DANIEL BUXTON, JR.'S STATEMENT.

The piece of land, planted with onions, to which I asked your attention, contains one hundred and five poles, and has produced, the present season, four hundred and forty-eight bushels fit for the market; being about four and a quarter bushels, or nearly two barrels to the square rod. The onions were not large, but were remarkable for uniformity of size, and excellence of quality. They were of the species called Silver Skin. They were thick and plump, which form has been produced by careful attention, in selecting such for seed for several years. I raise my own seed, and am particular to set such only for this purpose, as I wish to raise. In this way, I find their form can be modified nearly as I prefer it to be.

The land on which they grew, is part of a field of 13 acres, on Collins' plain, in Danvers, a light soil, free of stone. For ten years it has been under good cultivation, and freely manured;—most of the time this parcel has yielded onions. Barn

* Messrs B. P. Ware, of Marblehead, William Batchelder, of Andover, and J. M. Ives, of Salem, were associated in making this report.

MANURE, COMPOST, ASHES and MUSCLE-BED, have been the principal applications. Ordinarily, when I plant onions, I apply five or six cords of manure to the acre. In 1849, finding the crop to fail on this field, yielding short of three hundred bushels to the acre, I thought it needed some other nutriment, and as soon as the crop was gathered, I sowed it with oats, using a cultivator to cover them. These grew luxuriantly, and late in the fall, just as the ground was about to freeze, I turned them under, using a side-hill plough,* and running the furrows about eight inches deep. The entire crop was buried by the furrow, and so laid until spring; on examining it then, I found the oats as sound as when turned in, consequently I could not plough the land without disturbing the straw. I went over it several times with a cultivator, and then applied a moderate dressing of manure from my hog yard to the surface, say about two and a half cords to the lot, and mingled it with the soil as well as I could, taking care to remove all obstructions to the even distribution of the seed, and then planted with a machine in the usual way. It came up evenly, and grew well through the season, being kept entirely clear of weeds. The appearance of the plants through the season was uncommonly good, manifestly deriving much aid and support from the decaying green crop underneath. This is proved by another piece of onions in the same field, cultivated and manured in the usual way, where the crop was not more than two thirds as large as this. I am the more particular in describing this experiment with the oats, because it has succeeded beyond my expectations. I have seen other fields of onions the present season, where they grew to a larger size than these, and have no doubt mine would have been larger, if I had put on more manure,

* Within a few years, the use of the *side-hill plough* has come into much favor, among the gardeners in this neighboroood. It is thought to possess many advantages; among these, are the following:

1. It leaves the land free of *ridges* and *dead furrows;* incident to the use of the common plough. 2. It saves travel, at the end of the furrows. 3. It leaves the land true and even at the ends of the furrows, both as they *set in* and *come out.* 4. It requires less draft, as it keeps clean and bright; and leaves the land in better condition for cultivation. 5. So much do I esteem these ploughs that I would sooner pay *fifty dollars* for one for my use, than take a common plough for nothing.

but as a whole, I have not seen any crop that I should prefer. They sell at the present time for one dollar and twenty-five cents per barrel, delivered in Boston. I have so long been accustomed to keep my land clear of weeds, that the labor of taking care of onions is not more than twice as much as is required for Indian corn. I had no thought of offering this crop for your examination, until invited by the Chairman of your committee so to do. If this plain statement of facts shall be thought worthy of your notice, I shall be gratified to have thus contributed my mite in the way of improvements.

Danvers, Oct. 21, 1850.

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ABRAHAM C. OSBORN'S STATEMENT.

As much has been said and written on the onion crop, and premiums and gratuities have been freely awarded by the Essex Agricultural Society, for the most successful experiment in the cultivation of it, I propose to lay before you the results of my labor and success in the production of this crop.

It will be necessary, in the first place, to present in minute details, as near as can be ascertained, a statement of the expenditures incurred for manure, for labor in preparing the land, sowing the seed,—for cultivating, harvesting, and marketing the crop. To the above may be added the rent of the land per acre, or in other words, the interest of the actual worth of the land per acre.

I will commence my statement of expenses, by setting down the rent of land per acre at fifteen dollars, which sum is no more than the interest of what an acre of land is worth, which is capable of producing a good crop of onions. Then comes the expense for manure. Manure that is best adapted to produce a good crop, cannot be purchased short of four dollars and a half per cord, and it requires no less than six cords per acre, making the sum of twenty-seven dollars for the dressing, exclusive of hauling it upon the land, which is worth one dollar and a half per cord, thus making a total of thirty-six dollars in

that department of expense. To prepare the land, and sow an acre, and the seed for the same, is worth ten dollars. It requires, to cultivate an acre of onions properly, the labor of one man thirty-six days, including marketing, at an expense of fifty-nine dollars, thus closing the list of expenditures, which may be drawn up in a statement, after the following manner:

| | |
|---|---|
| For land rent, per acre, | $15 00 |
| " manure and drawing, | 36 00 |
| " preparing the land, &c., | 10 00 |
| " hoeing and weeding the first time, | 10 00 |
| " hoeing and weeding the second time, | 10 00 |
| " hoeing two days, | 2 50 |
| " pulling an acre, | 2 50 |
| " harvesting an acre, | 3 75 |
| " picking over four hundred bushels, | 6 25 |
| " carrying to Boston eight loads, | 24 00 |
| Making a total of expenditures, | $120 00 |

The most pleasant part of my task consists in recording the profits of the crop. I have never as yet been able to raise on an average, one year with another, more than four hundred bushels of onions to the acre. Such has been the result of my labor the past season. The profits accruing from an acre of onions, at four hundred bushels per acre, and at an average price of forty cents per bushel, is forty dollars. It has been the practice among cultivators of onions to spread on their manure, of whatever kind it may be, and plough it in, in the spring, to a depth scarcely sufficient to cover the dressing; year after year have they kept on in the old beaten track of shoal ploughing, thus rendering the soil below the depth of four or five inches, hard and unyielding, the result of which has been a great suffering of the crop, in a very dry time. It is evident that a piece of land, ploughed to such a depth for a long succession of years, must have a sub-soil which the roots of an onion cannot penetrate, hence the necessity of deeper ploughing. The question then arises, when shall this deep ploughing be performed? Shall it be done in the spring, or in the fall? It is obvious that if the dressing is turned in deep in

the spring, it will be a long while before the plants will receive the invigorating effects of the manure, which it requires to bring forth the crop in full strength to an early maturity. Shall we spread the manure, and plough it in deep in the fall? Shall we abandon our former method, and enter upon a new era in the cultivation of the onion?

For the sake of experiment, in the fall of 1849 I spread the manure upon an acre and a half of old onion land, as soon as convenient after the crop was harvested, at the rate of six cords per acre, and turned it in with a large plough drawn by a pair of horses, as deep as if I had been turning over green sward. There it lay pulverizing, through the winter; in the spring I took a cultivator, and went over the land once each way. As I was doing this I could see the fine particles of manure mixing with the soil most admirably. I dispensed with the use of the iron tooth harrow, bushed the land twice, raked, and sowed it. The seed germinated, came forth, and grew with a vigorous growth. When I came to hoe and weed, I found a great difference, compared with previous years. No hard lumps of dirt or manure were found, to injure the fingers of the operator; it was much easier to accomplish the same amount of labor as in previous years, under the old method of preparing the land. The roots of the plants penetrated to a depth heretofore rendered impossible by the hardness of the sub soil.

As the season has been unusually wet, I am unable to state how the crop would have endured a drought. I think it must be evident to the minds of all reasonable persons, that extremely dry weather would not have had so injurious an effect, as if the land had been ploughed shoal in the spring, with the manure partially covered. The result of my experiment has proved so favorable, that I shall make another trial, and test the utility of the practice another season. I shall plough in seven cords of good stable manure to the acre, it being an addition of one cord per acre.

So well convinced am I of the feasibility of ploughing in manure in the fall, for onions, that I should not hesitate for a moment to recommend it to all onion growers. I therefore offer for your consideration the foregoing statement, as the re-

sult of my experiment, and the crop of six hundred bushels of onions, raised upon an acre and a half of land.

Danvers, Oct. 18, 1850.

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BENJAMIN P. WARE'S LETTER.

Agreeably to request, I have noted down a few remarks suggested by my experience in the cultivation and consumption of the various root crops. The carrot crop I consider of the most value and importance to the farmer for the sustenance of his miscellaneous stock, as it can be raised with as little labor and expense as any other, yielding a larger amount, with more certainty, of food for stock than any other root with which I am acquainted, and of a quality unsurpassed. I have practised feeding carrots to milch cows, beef cattle, working oxen, horses, hogs, and fowls,—I find them valuable for all. I think one peck, or one and a half pecks, a sufficient quantity for one feed for neat stock or horses. I usually boil them and scald in meal, for hogs and fowls. I find that my stock appear in much better condition in the spring, and my hay and contents of the granary find great relief from the liberal use of this root; but in extolling the merits of the carrot, I would not forget the virtues of other valuable roots.

Mangel Wurtzel I consider of great practical importance to the farmer, but as the crop is not so certain, and as it leaves the land in much worse condition for future crops, while carrots leave the land in excellent condition, I give the latter the preference.

The Ruta Baga is a very valuable crop, not only for stock, but for the market as a vegetable. Its importance consists partially in the quickness of its growth, as it may be sown after other early crops are taken of, or in case of the failure of other crops; the seed may be sown as late as the 25th of July with good success, but this crop has the same objection as the Mangel Wurtzel, in regard to its injury to succeeding crops.

The flat Turnip is very easily raised, attended with little

expense, and is of comparatively little value for stock, although I think it better to raise them than no roots at all.

With me the cultivation of the Parsnip has been attended with considerable uncertainty and expense, proving unprofitable either for the market or stock, although a delicious vegetable for the table.

The Onion crop I have found to be about as profitable and safe for the farmer to invest in as any. Notwithstanding the blights, and attacks of lice and cut worms to which it is liable, we generally have a crop that repays for the labor bestowed upon it.

Marblehead, Nov. 13, 1850.

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BENJAMIN ROGERS'S STATEMENT.

I offer for premium a crop of Mangel Wurtzel, raised on one hundred and twenty-three rods of land, the product being three hundred and sixty baskets, weighing twenty-two thousand three hundred and twenty pounds, or at the rate of twenty-seven thousand nine hundred pounds per acre.

The soil is a light sandy loam, and is called by most persons very poor land, not worth cultivating. A crop of white beans was taken from the land last year, amounting to five bushels. The manure applied was three bushels plaster of Paris. This year it had eleven cords of compost, one third part barn manure and two thirds sand dug from the barn yard; all the manure was put into drills. It was ploughed on the 8th of May, and on the 11th and 13th of May the land was furrowed with a plough drawn by a horse, going twice in the same furrow; the manure was put into the furrow, and covered with a plough, making a small ridge; the ridge was then raked so as to make the ground nearly level. The holes for the seeds were made by a wheel containing pegs in its circumference, which penetrated the ground one inch, leaving intervals of four inches. The rows were thirty inches asunder; one capsule was dropped into each hole, and covered with the feet, by treading on each hole.

The quantity of seed sown was three pounds. The cultivator was twice used before the 6th of August, and hoed twice. In the month of July the plants were thinned, and left from eight to sixteen inches apart in the rows. The expense of cultivation was as follows:

| | |
|---|---|
| Interest on land, | $1 20 |
| Ploughing, | 2 00 |
| Harrowing, | 1 50 |
| Eleven cords compost, at three dollars per cord, | 33 00 |
| Furrowing with horse, | 1 50 |
| Carting and spreading compost, | 6 60 |
| Seed, | 1 50 |
| Cultivating with horse, | 3 00 |
| Hoeing, | 7 00 |
| Thinning plants, | 4 50 |
| Digging and carting, | 4 50 |
| Total of Expenses, | $66 30 |
| The value of crop, at six dollars per ton, | $66 86 |
| The value of tops, | 4 00 |
| One half manure on land, | 16 50 |
| Total, | $87 36 |
| Expenses, | 66 30 |
| Net profit,* | $21 06 |

Andover, Nov. 15, 1850.

* This specification came to hand after the premium had been awarded for the experiment in cultivation. As this was the only claim presented for the cultivation of *beets*, the committee were disposed to regard it with favor. On examining it, it appears that the land on which they grew, is of small value and of very poor quality, such as ordinarily produces no crop at all. If he who makes two blades of grass to grow where but one grew before, is to be reckoned a public benefactor, surely he who makes a decent crop to grow where none grew before, cannot be undeserving the Society's premium, although some of his more fortunate neighbors, in the possession of better lands, shall be favored with crops more abundant. The *skill* exhibited in the production, and not the *amount produced*, is what we aim to approve.

JOSEPH SNELLING, JR'S. STATEMENT.

You are undoubtedly aware, that the failure of the potato crop the present season has been a source of disappointment, perhaps not a little discouragement, to farmers in general in the cultivation of this vegetable, throughout the State. As it fell to my lot, the present year, to harvest our little crop of potatoes alone, I thought it would be a good opportunity to make a little inquiry into the nature of the disorder, and try if possible to get at some clue to a remedy. But this was undertaken with a very faint hope of discovering any thing useful or satisfactory. Having but little confidence in theories, unless substantiated by actual experiments, I at first thought it best to say nothing about my investigation to any one, till I could prove by actual experiment, something which might be beneficial; but when I considered, although I might not be able to furnish the requisite knowledge or ability to obtain a good crop, yet perhaps I might furnish a key to it, and thereby assist some of my fellow laborers who are still remaining under the same disadvantages which I have labored under, not knowing where to plant, how to plant, or what to plant, I concluded to commit the results of my investigation to writing, with the hope that I shall be pardoned wherein I am found to be behind the age, either in knowledge or literature.

I do not attribute the cause of the potato disorder to an insect or animacule burrowing in the plant. If it can be demonstrated by optical glasses, that insects inhabit the vines or animacules the rotten potatoes, I contend that they exist there, not as a cause, but as an effect of the disorder. The cause of the disorder I attribute to the want of a certain principle or element in the soil, which is indispensable to the health of the potato plant, and which has in many parts of Massachusetts, as well as in Ireland, become exhausted. I believe that this element exists in natural deposites in many places throughout the State, not far below the surface—perhaps no deeper than the sub soil. Furthermore I am aware that it still exists in the surface soil, perhaps in considerable abundance in some particular places, but unless those who plant know that it exists there,

all their endeavours to obtain a good crop, will be at hap-hazard. If the proprietors of this kind of soil have been raising good potatoes from it, year after year, with the real cause of their having good potatoes staring at them with meridian brightness, and they have not discovered it, perhaps this brightness may have been eclipsed by the brightness of the forth coming dollars, which they were likely to receive for their resplendant crop. But if they have discovered it, and keep it a secret, that they may obtain thereby a yearly income, and enjoy in the lap of nature what others are toiling to obtain by art, it is high time for those who have to depend on art as well as nature for a living, to put in for a share. But I have thought perhaps very few of our farmers, either practical or scientific, have discovered the real cause why some raise good potatoes. My reasons are these—1st. Our practical farmers have not discovered it, because it consists of principles so different from what they have considered indispensable to vegetable life, especially to that of the potato, that they have entirely overlooked it. 2d. Our scientific farmers have not, because they have not gone into the potato field with hoe and basket, and bent down to the work, digging and comparing hill with hill, and examined the soil, the manure, and the potato, in order to ascertain what was deficient, and what was superabundant.

I am inclined to think the disorder has been aggravated by the stimulating effect of stable and barn cellar manure, too highly charged with ammonia for a healthy growth in this plant,—the unnatural stimulus propagating the disorder, and inducing mildew in the premature vines, where the disorder appears to commence. It should be remembered that the potato is a kind of plant which grows BELOW the surface of the ground, having the ground for its element and the air for its sustenance, the vines being nothing more or less than aerial roots, through which it derives its sustenance, in order to make it grow and perfect its mealiness. Hence we see the necessity of healthy, lively vines, and also of proper sustenance below the surface to produce these; for if we cannot have healthy, lively vines, we should not expect good and sound potatoes. I am inclined to believe we should depend more upon the natu-

ral, steady warmth of a genial soil to perfect the vines, than on the stimulating heat of fermenting manure.

Has there as yet been a better method discovered to overcome this disorder, than to plant early, in a warm genial soil? If we admit the production of healthy, lively vines, to be the first and great desideratum, then I think we may also admit the utility of planting early in a warm, genial soil, in order to have the vines cover and shade the ground, if possible, before the drought of summer. But in case the season should be wet, caution against mildew in the vines may be necessary, therefore a proper location for the potato field, appears to demand our consideration. I think it will be acknowledged by every one, that if we plant on a swell, or on a side hill, or in some location where the vines will be exposed to the air, and enjoy freely their natural element, they will be less likely to mildew than when planted in a hollow or on a level; and the superabundant rain will of course run and be disposed of. If we have raised thrifty and productive apple trees, or sound and heavy corn in a certain hollow, does it naturally follow that we can raise tolerable potatoes there?

But a few words respecting the quality or kind of soil best adapted to the nature of the potato, may be thought necessary. The principle or element in the soil, which is indispensable to the health of the potato plant, and to which I have alluded in these remarks, I think I have found to be more abundant in yellow marl, or as some have termed it, yellow dirt. Wherever this may be found, of a bright orange color, in considerable abundance, I think we need not hesitate to plant potatoes; yet this may not always prove infallible, for I am inclined to think its virtue lies in the organic or combustible matter which it appears to be more or less charged with. There is a kind of yellow marl which I would recommend for a compost with stable manure, to put in the hill, as an experiment. It is such as I have seen, of a bright orange color, in the banks by the road side, where a cut has been made for a road through the top of a hill covered with shrub oaks.

Methuen, Nov. 4, 1850.

## ON FARMS.

There have been but two farms entered for premium the present year. The farm of J. F. Winkley, of Amesbury, entered by Appleton Moore, and the farm of Henry Poor, of North Andover; but the last mentioned farm was not entered so soon as the rules of the Society require.

Mr. Winkley's farm is situated near Amesbury Mills, and consists of about thirty-eight acres of plain land, except a few acres considerably elevated, on which the house stands, having a fine prospect, and overlooking the adjacent towns. When the committee visited the farm, on the 22d of June, the crops, especially the corn and potatoes, looked well. When they visited the farm on the 11th of September, the potatoes were mostly dug and carried to market, and the crop said to be light. The corn crop looked well, and Mr. Moore states that one acre produced one hundred and thirty bushels of ears of good corn, which is probably considerable more than an average crop on the whole piece. The crop on the whole was a good one, considering the previous situation of the land.

Mr. Moore is making large quantities of manure, and is also trying various experiments, which, it is hoped, in due time will be made public. This is as it should be. Every farmer should not only avail himself of the experience of others, so far as practicable, but should try experiments for himself, as different kinds of land require different management, and a farmer's experience on his own farm, is usually worth more to himself, than information derived from others. The committee consider Mr. Moore's management, generally, very good, but his slatement is somewhat deficient. They recommend that he receive the sum of fifteen dollars.

Mr. Poor's farm the committee visited but once, which was on the 6th of July. His farm is situated in North Andover; the land is a deep rich soil, rather moist, well adapted to grass, and some of it has prodnced fine crops of corn, wheat, &c. The buildings and fences are in good repair, and his farm generally, shows the marks of good husbandry. His fruit trees and crops generally looked well, but the attention of the com-

mittee was particularly called to a field of winter wheat, which looked finely. They were informed that he had cultivated it for some years with good success, and although in his statement he says it is his favorite crop, yet he has omitted giving any information in regard to the amount of his crop, or the manner of cultivation. The committee consider his statement very deficient, as he has omitted that which is of the greatest importance, viz. the manner of making and applying manure, and the cultivation and amount of his crops. They recommend that he receive the sum of ten dollars.

Having visited Mr. Poor's farm, the attention of the committee was called to the farm of Josiah Crosby, of North Andover. His land, like Mr. Poor's, is a deep rich soil, rather moist, well adapted to the cultivation of hay, which has been almost his sole crop. He has made considerable improvement. Land which a few years since was covered with bushes, now produces a fine crop of English hay. He observed that he had hauled sand three fourths of a mile, and considered it profitable for top dressing. He, as also Mr. Winkley and Mr. Poor, has a cellar under his barn, for the purpose of keeping swine and making manure.

There seems to be a gradual improvement among a large portion of our farmers, but not so much as their interest requires. There is the material on almost every farm, if judiciously applied, to enrich itself; compost of mud should be used on high warm land, and subsoil on low moist land; sand should be used on clay, and clay on sand, thus by changing the soil it increases its fertility. But in most cases, too much land is cultivated. It does not necessarily follow that because a man cultivates a large quantity of land, that he is a good farmer. Neither is he the best farmer, in all cases, that grows the largest crops, for although he may raise a large crop, yet the expense may exceed its value, which is not, (in ordinary cases,) good farming. But he is the best farmer who will raise the greatest crop under the same circumstances, with the least expense.

JOSEPH HOW, Chairman.

Salem, Nov. 29, 1850.

APPLETON MOORE'S STATEMENT.

The farm examined by the committee, and which is offered for premium, contains thirty-eight acres, mostly of what is called plain land—either sandy or of a sandy loam, underlaid with gravel. The remainder, (about nine acres,) is a gravelly loam, underlaid with clay pan; the whole, with the exception of about six acres which is too steep for easy cultivation, and which is set with fruit trees, is under cultivation with crops as follows, viz: Corn, sixteen acres; potatoes, eight acres; peas, cabbages, turnips, parsnips, carrots, onions, &c., six acres; and about two acres of corn sown broadcast, for fodder.

The most important feature to which the attention of your committee is called, is the previous condition of the land, the whole of which four years since was a pasture, which rented for the small sum of twelve dollars per annum, and which exhibited the appearance of having once been tilled, with a sufficient return of manure, until it would pay no longer for the cultivation, and was suffered to run to waste, or to very poor pasturage at best. Three years since the greater part of the land was broken up, and the next season, without dressing, planted with beans. One year ago it was planted with corn, potatoes, &c., a part with a very limited proportion of dressing and the other part without any, of the evil tendency of which upon the soil, the committee is well aware.

The past winter preparations were made to make returns to the soil for what had been taken from it, by procuring at great expense night soil and other fertilizers, and composting the same so far as practicable, with meadow muck, of which there is an inexhaustible supply within one fourth of a mile from the barn. These composts, to the amount of about five hundred ox cart loads, were used the past spring upon the land intended for cropping, and although the supply was very limited, it was spread upon the surface and ploughed under to the depth of five to seven inches, believing though the quantity of manure be small that it is better spread and ploughed under, than to be put into the hill, thereby giving the young plants a rapid and thrifty start at first, and then leaving them to starve and

stint on a poor soil as soon as the roots attain a sufficient length to pass the frontier of the hill in which they are planted.

Of the crops the present season, we cannot speak so definitely as we should wish, not having completed the harvesting; but of the potato crop we have nothing to boast, as they were generally of a small size, and upon the whole the crop was a light one, yet very sound, as we had not a bushel of unsound potatoes from the eight acres planted. The corn, considering the season, was fair; it was very sound, though not so well tipped as it is some seasons. From one acre measured, we have taken at the rate of one hundred and thirty bushels of ears, and the corn of a good quality. The crops of peas, cabbages, carrots, &c., are good, though not being harvested, we cannot give the particulars. The corn sown broadcast proved a very cheap feed for stock, besides having the effect of leaving the ground upon which it was sown in a very mellow state for after cultivation, a part of which, together with a portion of the potato ground, has been sown with winter wheat, and which now looks very promising.

Our manner of cultivating corn being somewhat different from that usually practised in this vicinity, I will give you a brief description of. The manure having been ploughed in, as before alluded to, the corn was planted with Batchelder's Corn Planter, in rows three feet apart by two and a half feet in the hill. One man with a horse, and a boy to drive, will readily plant six acres in a day, and leave it in a state for hoeing preferable to that planted in the usual way, as it leaves the ground and hill better adapted to a flat cultivation. After the corn was well up, the horse cultivator was put into it, and with one man to hold and drive, was passed through it once a week until the corn roots had extended to the distance of six or eight inches from the hill, after which a slight passing over with the hoe proved sufficient.

Six men have generally been employed upon the farm, though a large portion of labor has been done otherwise than upon the crops, all of which has been charged separately, leaving the farm accounts for the ploughing, manuring, planting and cultivation of the crops, and the larger part of the harvest-

ing, standing thus: April 1st to November 1st, two hundred and sixty-one dollars, being a fraction over eight dollars per acre for the thirty-two acres tilled, exclusive of board and team expenses.

Of the manure heap I will speak briefly. Early in the season we commenced putting muck under the cattle, and continued in this way until the weather becoming cooler and fearing that evil effects might arise from its continuance, we adopted the following plan: Daily, the manure, both solid and liquid, from twenty head of cattle and horses, is dropped into the barn cellars, and immediately about three times the quantity of meadow muck is wheeled in and thrown upon it, which in a very short space of time becomes thoroughly incorporated with the manure, through the agency of hogs, a sufficient number for the purpose being kept in each cellar. In this way we not only find the manure heap to increase rapidly, but judging from the escape of ammonia while it is being shoveled over, the quality of the same must be good.

To some very interesting experiments in the feeding of hogs, we should like to allude, but cannot, as the results are not sufficiently determined.

Amesbury, Nov. 1, 1850.

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## HENRY POOR'S STATEMENT.

In presenting my farm for premium, I do so with some diffidence, from the fact that I lack knowledge in the proper cultivation of the soil, and the proper uses and application of manures. There is one fact, however, well known to us all, and that is that the manure heap is the only reliable "Bank" on which the farmer rests his hopes. My own small experience teaches me the importance of cultivating just as much land as I can supply liberally with manure; beyond this is a fatal error, which is quite too common among us, in my judgement.

To say there can be no improvement in cultivating the soil, and that new discoveries cannot be made in farming, would be to say that the plough, the hoe, the hay fork, the manure fork,

and all farming implements have not been improved, and are not susceptible of still greater improvement. To my mind, farming, in detail, is co-equal with the improvements of all the implements of husbandry. But I will begin an account of my operations since the year 1844, on the farm which I now own and occupy.

I have built a barn and shed, repaired an old barn, added an L to my house, with cellar under new barn thirty-eight by sixty feet, and solid mortar wall, at a cost of over three thousand dollars. My house cellar I have bricked over, and made it proof against rats; have built a brick cemented cistern, with pipe and pump to draw the water into my sink, with well water into the kitchen. Of covered stone drains I have made fifty-five rods; of faced double wall, on either side of the road, fifty-four rods; of double substantial field wall, forty-eight rods; of single wall, sixty-three rods. I have made seven to eight acres of old heavy pasturing into good mowing fields, and walled the same. Have planted fifty-six choice varieties of pears; two hundred and four of apples; seventy-one of plums; fifteen of cherries; two hundred and eighty-one of peaches; sixty of quinces; and twenty ornamental trees.—Total, seven hundred and seven. Have filled all old trees that were thrifty with scions of pears and apples. In addition, I have put in the smaller fruits, such as raspberries, gooseberries, strawberries, and currants.

My hay crop, this year, was good,—by careful judgement, I cut over forty tons on less than twenty acres of ground. Of wheat, which is my hobby, I could ask nothing better. Of oats and barley, my crop was satisfactory. Indian corn heavy for the season,—land moist. Carrots, small. Sugar beets, satisfactory. Parsnips, small. Potatoes, twenty-five per cent saved. Fruits in abundance, excepting apples, this not being the bearing year with my varieties.

My whole farm consits of seventy-five acres,—say, ten of wood land, thirty of pasturage, and thirty-five of tillage. I am not aware that there is a rod of unproductive land in the farm. My stock consists of fourteen neat cattle, two horses, and twelve hogs, with a full stock of the feathered tribes.

North Andover, Nov. 1850.

## ON VEGETABLES.

The Committee, having in charge the specimens of vegetable productions, report that the exhibition was unusually large and fine, and they recommend that the following gratuities be awarded:

| | | |
|---|---|---|
| A. Nesmith, Beverly, seedling potatoes, | gratuity, | 75 |
| A. Hatch, Saugus, " " | " | 75 |
| Eben H. Taylor, two varieties, | " | 50 |
| W. Poor, Andover, black potatoes, | " | 50 |
| H. Mason, Marblehead, onions, | " | 25 |
| J. W. Treadwell, celery, | " | 25 |
| J. M. Ives, Salem, sweet potatoes, | " | 25 |
| J. Upton, Salem, variety of vegetables, | " | 50 |
| A. A. Edgerton, sweet potatoes, | " | 25 |
| John Clark, millet, | " | 25 |
| H. Mason, Marblehead, marrow squashes, | " | 25 |
| Jesse Estes, Middleton, Mt. Sprout water melon, | " | 25 |
| Jonas Harrington, Danvers, marrow squashes, | " | 50 |
| J. K. Haines, Salem, crook neck squashes, | " | 25 |
| John Alley, 3d., Lynn, Averlene cabbage, | " | 25 |
| John Trow, Hamilton, six squashes, 225 lbs. weight | " | 75 |
| Mrs. S. Lord, Salem, variety of pickles, | " | 50 |
| P. Farmer, crook neck squash, | " | 25 |
| B. D. Hill, Jr., Danvers, snake cucumbers and tomatoes, | gra. | 50 |
| Niles P. Phippen, Texas corn, | gratuity, | 25 |
| M. L. Atkinson, Methuen, corn, | " | 50 |
| Israel Rea, Topsfield, " | " | 50 |
| Moses Pettingill, Topsfield, " | " | 50 |
| Eben M. Taylor, Danvers, " | " | 50 |
| Israel Trask, Beverly, crook neck squash, | " | 50 |
| J. Burpee, Georgetown, broom corn, | " | 50 |
| E. R. Mudge, Lynn, celery, egg plants, and tomatoes, | " | 1 50 |
| John Bradstreet, Danvers, potatoes, | " | 50 |
| Gilbert Conant, Ipswich, Southern corn, | " | 50 |
| M. P. Atwood, squash, mixed variety, | " | 25 |
| N. Woodbury, Valparaiso squash, | " | 25 |
| H. Poor, Andover, white flint wheat, | " | 50 |

| | | |
|---|---|---|
| H. Poor, Andover, red chaff Chili wheat, | gratuity, | 1 50 |
| John L. Clark, Salem, Black Sea wheat, | " | 1 00 |
| W. D. Pickman, two very large squashes, | " | 50 |

HORACE WARE, Chairman.

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## ON FLOWERS.

According to previous arrangements, this portion of the Exhibition was held in connexion with that of the Essex Institute, and under their direction. A very minute and elaborate report will be prepared by their committee, enumerating the several contributors, the specimens exhibited, &c., which will be printed in the transactions of the Society, thus rendering it only necessary for your committee to report the list of gratuities awarded, which are as follows:

| | | | |
|---|---|---|---|
| F. Putnam, Salem, | for bouquets, | - - | 1 50 |
| James H. Holmes, Salem, | for bouquets and cut flowers, | | 1 00 |
| Miss R. S. Ives, Salem, | for bouquets, | - - | 25 |
| Miss Sarah H. Ropes, Salem, | for bouquets, | - - | 25 |
| Miss Caroline A. Morse, Methuen, | bouquets, | - | 50 |
| George Driver, Salem, | for dahlias, | - - - | 50 |
| John W. Downing, Salem, | for dahlias, | - - | 50 |
| Thorp Fisher, | " " " | - - - | 50 |
| E. Buswell, | " " " | - - | 37 |
| E. D. Ropes, | " " " | - - - | 37 |
| W. D. Pickman, | " | pot plants and cut flowers, | 1 00 |
| J. C. Lee, | " | roses and cut flowers, | 1 25 |
| F. Putnam, | " | roses, - - - | 1 00 |
| Calvin May, | " | pot plants, - - | 50 |
| William Weeks, | " | asters and stocks, - | 50 |

For the Committeee. H. WHEATLAND.

Salem, Sept. 26, 1850.

# REPORT

OF THE

# HORTICULTURAL EXHIBITION.

*To the President and Members of the Essex Institute:*

The Committee on Horticulture report that the annual exhibition of Fruits, Flowers, and Vegetables, for the year 1850, took place at the Town Hall in Salem, on Wednesday and Thursday, September 25th and 26th, in connexion with that of the Essex Agricultural Society, in conformity with previous arrangements to that effect.

The hall was beautifully decorated, the committee being assisted in this portion of their duties by the refined taste of the ladies who so kindly volunteered their aid on this occasion. The large and elegant evergreen arbor opposite the entrance, formed a very conspicuous object, presenting a great variety of wild flowers tastefully grouped together; and supported by two immense cornucopiæ, pouring forth their abundant treasures—the one, of vegetable productions, and the other of fruits in great variety. Over the centre door was a tablet containing the name of POMONA, surrounded with a rich border of fruits. The eastern door was surmounted with a similar tablet, containing the name of CERES, with a chaste wreathing of grains and grasses; while FLORA occupied a similar position over the western door, decked with a gorgeous array of flowers. Other decorations adorned the windows, and bouquets and vases of flowers in abundance were arranged on the tables, and around the hall.

Among the curiosities that attracted much attention, were pears from the original Endicott pear tree in Danvers, which tradition says was planted in 1630; some fine looking Orange pears, from a tree two hundred and ten years old, on the estate of Capt. William Allen, in Hardy street; also, apples from a tree planted by Peregrine White, the first male child born in New England, on the farm originally settled and subdued by him in Marshfield. The farm is now owned and occupied by his direct descendants, by one of whom, Miss Sybil White, the apples were sent to Dr. Merriam, of Topsfield. These relics of past ages are yet productive, and their fruits of no little curiosity.

The display of Fruit was very fine, especially that of Pears, which, for their variety, beauty, and perfection, may well challenge comparison with any similar exhibition of this season. Two thousand dishes or baskets of fruit were pla-

ced upon the tables, consisting, as will appear from the list, of six hundred and seventy varieties, viz: of Pears, two hundred and ninety with names, eight seedlings, and twenty-nine unknown—total, three hundred and twenty-seven; of Apples, one hundred and fifty-one with names, seven seedlings, and twenty-three unknown—total, one hundred and eighty-one; of Peaches, forty with names, thirty-four seedlings, eight unknown—total, eighty-two; of Plums, nineteen with names, three seedlings, one unknown—total, twenty-three; of Grapes, thirty-three with names, eight native seedlings—total, forty-one; of Quinces, Nectarines, Figs, and Melons, three each; of Oranges, Lemons, European Walnuts, and Cornelian Cherries, one each.

The specimen flowers were arranged on stands which occupied the centre of the hall, and comprised a goodly array of Dahlias, Roses, Asters, &c. The Dahlias were the most prominent in their variety and the gorgeousness of the flowers. A stand from Lawrence, brought in on the second day, contained the finest specimens in the hall. The Rose, which with its hybrid Perpetuals, Noisettes, and Bourbons, is beginning to extend the season of its lovely and fragrant blooms during the autumnal months, was well represented. The Asters, Stocks, and Coxcombs were also conspicuous. A stand of Pansies, and also a stand of Phloxes, Antirrhinum in varieties, Œnothera, Aconitum, Gaillardia, Tradescantia, Trollius, &c., added much to the interest of the exhibition.

A few pot plants were placed on the platform in front of the arbor, consisting of Achimenes, Gloxinias, Fuchsias, &c., whose showy and splendid flowers formed a striking contrast with the native denizens of our fields and meadows, grouped in the rear.

The Vegetables, &c., were arranged in the anterooms. The display, although not large, was very interesting, and consisted of fine specimens of Squashes, Potatoes, Onions, &c. In this department were placed the Cereals—as varieties of Corn, Wheat, &c. The cultivation of the last named grain is said by the gentlemen who exhibited specimens, to have been successful; and it is greatly to be desired that further experiments should be tried by our agriculturists, to test fully the advantage of its more general introduction.

Nineteen towns of our county were represented by the contributions of one hundred and ninety-one individuals, viz: from Salem, one hundred and twenty-three; Danvers, sixteen; Lynn, eleven; Beverly and Topsfield, five each; Middleton and Methuen, four each; Marblehead, Andover, Hamilton, and Ipswich, three each; Wenham, Lawrence, and Saugus, two each; Boxford, Newburyport, Newbury, Haverhill, and Gloucester, one each. Also, two from South Reading, one from Lowell, and one from Kendall, Illinois, which being without the limits of the county, were not included in the above estimate.

A comparison of the present exhibition, with the first of the kind ever held in Salem, shows a very gratifying as well as rapid increase of interest in the cultivation of fruits and flowers. That exhibition was held on Tuesday and Wednesday, September 14th and 15th, 1841. The number of contributors was then seventy-six,—about three hundred plates of Fruit were placed on the tables, comprising one hundred and fifty-three varieties, viz: ninety-four of Pears, twenty-five of Apples, ten of Peaches, eight of Plums, eight of Grapes, four of Melons, two of Quinces, one of Nectarines, and one of Filberts.

May we not justly infer from the above comparison, that the labors of the Institute in maintaining their stated exhibitions have not been in vain; but have resulted in diffusing through the community a more general and extensive taste for horticultural pursuits, thus accomplishing the principal object of their establishment.

Annexed is a list of the contributors, and of the articles by them exhibited.

Respectfully submitted.

JOHN C. LEE, Chairman.

Salem, Mass. Oct., 1850.

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## FRUIT.

R. Manning, Pomological Garden, Salem. *Pears*—Bezi de la Motte, Long Green, Lawrence, Fig of Naples, Andrews, Favorite Rousselet, Bartlett, Duchesse d' Orleans. Belle et Bonne, Frederic de Wurtemberg, Eyewood, Columbia, Charles of Austria, Fulton, Golden Beurre of Bilboa, Beurre Bose, Beurre d' Amanlis, Bezi de Montigny, Comte Lelieur, March Bergamot, Bergamotte d' Automne, Moccas, Monarch, Croft Castle, Harvard, Petre, Hericart, Flemish Beauty, Shobden Court, Beurre Van Marum, Swan's Egg, Ronville, Calebasse Monstreuse, Caen du France, Hunt's Connecticut, Howell, Henkil, Doyenne d' Hiver, Beurre d' Aremberg, Doyenne Goubault, Brown Beurre, Pennsylvania, Figue Extra, Huguenot, Capsheaf, Aston Town, Paradise d' Automne, Cushing, Black Pear of Worcester, Styrian, Jaminette, Wilbur, Gansel's Bergamot, Bishop's Thumb, Urbaniste, Dallas, Rouse Lench, Henrietta, Monsieur le Cure, Flemish Sabine, Dunmore, Serrurier d' Automne, Althorp Crassanne, Anonymous, Bon Chretien Fondante, Coter, Comte de Lamy, Comstock, Spanish Bon Chretien, Clara, Hathorne's Seedling, St. Michaels, Bergamotte Zappee, John Dean, Edwards, Whitfield, Beurre Kenrick, Pomme Poire, Bergamotte Parthenay, Queen Caroline, Hacon's Incomparable, Beurre Goubault, Jubin, King Edward, Plombgastel, Rameau, Monarch (false), Rousselet d' Esperen, Nouveau Poiteau, Brande's St. Germain, Napoleon, Chaumontelle, Henri Van Mons, Calebasse, Citron of Bohemia, Jalousie de Fontenay Vendee, Wendell, Long Green of Autumn, Schoeling Nierry, Delices de Jodoigne, Foster's St. Michaels, Ambrosia, Girardin, Summer Thorn, Capiaumont. Queen of the Low Countries, Nos. 982, 1036, and 1454 of Van Mons. *Apples*—Pound, Green Sweet, Pigeonnette, Minister, Fall Harvey, Pumpkin Sweet, Swaar, Hubbardston Nonsuch, Garden Royal, Lyscom, Rambour d' ete, President, Ribston Pippin, Lemon Pippin, Gravenstein, Gloucester, Porter, Fallawater, Drap d' Or, Maiden's Blush, Golden Noble, Summer Sweet Paradise, Corse's Sweeting, Walpole, Black, Haskell's Sweeting, Roi Saube, King of the Pippins, Triangle, Pomme Arabic, Danvers Winter Sweet, Yellow Bellflower, Pennocks, Edwards' Russet, Hawthornden. *Peaches*—Jacques, Washington, Melacoton, Apricot, Yellow Admirable, Elisabeth, Kenrick's Heath, Grosse Mignonne. *Plums*—Rogers, Downton Imperatrice, one variety unknown.

J. C. Lee, Salem. *Pears*—Calebasse de Nerkmann, Delices de Jodoigne, Beurre Sprin, Beurre Bronze, Soldat Laboureur, Poire Henriette, Poire Du-

vernay, Beurre Gris d' hiver nouveau, Orpheline d' Enghien, Ferdinand de Meester, Beurre Curtel, Poire Serrurier, Doyenne Sieulle, Girando, Poire d Albret, Beurre Montgeron, Beurre Moire, Poire Millot, Beurre Beauchamps, Jalousie de Fontenay Vendee, Bergamotte Le Sible, Belle apres Noel, Beurre d' Elberg, Poire Seigneur, Gansel's Bergamot, Seckel, Washington, Rousselet de Rheims, Bartlett, Heathcot, Bleeker's Meadow, Henri Quatre, Passe Colmar, Bezi de la Motte, Glout Morceau, Buffum, Winter Nelis, Marie Lonise, Josephine, Croft Castle, Girardin, Nameless, Long Green, Fulton, Winter Orange, Parkinson's Warden, Poire Sage, Delices d' Hardenpont, Poire de Louvain, Ne Plus Meuris, Belle et Bonne, Colmar d' Aremberg, Beurre Fougere, St. Bernard, Plombgastel, Missile d' hiver, Belle Epine Dumas, Flemish Beauty, Duchesse d' Angouleme, Eyewood, Broughan, Lodge, Cross, Beurre Spence, Tyson, Henkil, Comte de Lamy, No. 56 Van Mons, Las Canas, Lawrence, Aston Town, Louise Bonne de Jersey, Beurre de Beaumont, Wilbur, Belle Lucrative, Beurre Diel, Calebasse Vaste, Beurre Bosc. *Apples*,—Baldwin, Danvers Winter Sweet, Rhode Island Greening, Pickman Pippin, Jonathan, Spice, Ortley Pippin, Peck's Pleasant, Fall Flat, Lyscom, Glory of the West. *Peaches*,—Morris' Red Rare Ripe, Cooledge's Favorite, Bonaparte, Crawford's Early. *Grapes*,—Black Hamburg, White Chasselas, Variegated Chasselas, Grove End Sweetwater, Flame Colored Tokay, Black Tripoli, Black St. Peters, Scotch White Cluster.

JOHN M. IVES, Salem. *Pears*,—Golden Beurre of Bilboa, Bartlett, Cushing, Monsieur le Cure, Paradise d' Automne, Beurre Diel, Leon le Clere, Columbia, Long Green, Fulton, Flemish Beauty, Beurre d' Aremberg, Hacon's Incomparable, Easter Beurre, Duchesse d' Angouleme, Bezi de la Motte, Belle Lucrative, Andrews, Pitt's Prolific, Bon Chretien Fondante, Jalousie, Knight's Monarch, Dunmore, Beurre Bosc, Thompson. *Apples*—Hubbardston Nonsuch, Aunt Hannah, Minister, Boxford, Deacon (?), Pickman Pippin, Barker's Spice, Seaver's Sweeting, Transparent, Reinette of Canada, Fall Harvey, Swaar, Mela Carla, Porter, Lyscom, Danvers Winter Sweet, Carthouse. *Peaches*,—Jaques' Yellow Rare Ripe, Crawford's Early, Mellish's Favorite, Snow, Seedling Free-stone, Early Royal George, Hasting's Rareripe, Cutler's Rareripe. *Plums*,—Red Gage, Goliah, Reine Claude Violet, Violet Perdrigon, Sharp's Emperor. *Grapes*,—Isabella. *Figs*,—Turkey. *Quinces*,—Orange. Cornelian Cherry.

CHARLES F. PUTNAM, Salem. *Pears*,—Doyenne Boussock, Beurre d' Amanlis, Smith, Malcommaitre, Rousselet Van Mons, Jean de Witte, Beurre Bronze, Van Mons Leon le Clere, Belle Heloise, Jalousie, Gendesceim, Beurre Dore, Monsieur le Cure, Bartlett, Beurre de Beaumont, Doyenne Musque, Comte de Lamy, Doyenne de Kirkman, Fondante Van Mons, Pope's Russet, Bleeker's Meadow, Althorpe Crassanne, Winter Nelis, Julienne, Bezi Sanspareil, Beurre d' Espoelberg, Belle Epine Dumas, Doyenne d' Hiver Nouveau, Long Green of Autumn, Poire Cire, Nouveau Poiteau, Bon Chretien Fondante, Salviati, Caillot Rosat, Wilhelmine, Angelique de Bordeaux, Beurre Bolwiller, Long Green, Marquis d' Hiver, No. 426, Buffum, Rondelet, Bossuck, Beurre Gris d' Hiver Nouveau, Colmar Tardif, Passe Colmar, Bergamotte Cadette, Jalousie de Fontenay Vendee, Forelle, Bonne de Zees, Chau-

montelle Germain, Gerardo, Bernadiston, Mabille, Inconnue Van Mons, Beurre Supreme, Rigoleau, Chaumontelle, Bergamot Bernard, Doyenne Gris, Van Mons (unnumbered), Pitt's Prolific, Louise Bonne de Jersey, Beurre Bosc, Garrous, Beurre de Printemps, Duchesse d' Angouleme, Madotte, Callirosa, Calebasse d' Ete, Easter Beurre, Smith's Pennsylvania, one seedling, and eight varieties unkown. *Apples,*—Minister, Hubbardston Nonsuch, Roxbury Russet, Danvers Winter Sweet, Benoni, Ramsdell's Red Sweet, Scarlet Nonpareil, Fallawater, Tenny, Cathead, Black Baldwin, Swaar, Hamilton, Deux ans, Adams Pearmain, Spitzenberg, Fall Harvey, Sykehouse Russet, Maiden's Blush, Porter, Rambour d' Ete, Rhode Island Grenning, Claygate Pearmain, Reinette d' Hiver, Cockle Pippin, Reinette de Vigan, Lyscom, Reinette Van Mons, Sturmer Pippin, six varieties unknown.

Ephraim Woods, Salem. *Pears,*—Bartlett, Andrews, Bon Chretien Fondante, Belle et Bonne, Beurre Bosc, Belle Lucrative, Bezi de la Motte, Columbia, Catillac, Golden Beurre of Bilboa, Fulton, Lawrence, Long Green, Marie Louise, Petre, Harvard. Queen of the Low Countries. *Apples,*—Nodhead, Baldwin, Fall Harvey, Monstrous Pippin. *Plums,*—Three seedling varieties. Orange Quinces.

George Andrews, Salem. *Pears,*—Louise Bonne de Jersey, Winter Nelis, Bartlett, Rousselet de Rheims, Messire Jean, Seckel, Bezi de la Motte, Monsieur le Cure, Flemish Beauty, St. Michaels, Golden Beurre of Bilboa, Long Green of Autumn, Hacon's Incomparable, Washington, Orange, March, Iron, Chelmsford, Beurre d' Amanlis, one seedling variety. *Apples,*—Monstrous Pippin, Minister, Lady, Baldwin, Pearmain, Porter, Bellflower, two varieties unknown.

Augustus D. Rogers, Salem. *Pears,*—Flemish Beauty, Belle Lucrative, Louise Bonne de Jersey (on quince and on pear), Napoleon, Washington, Cushing, Duchesse d' Angouleme, Urbaniste, Gansel's Bergamot, Wilkinson, Seckel, Andrews, St. Ghislain, Golden Beurre of Bilboa, Passe Colmar, Winter Nelis, Beurre Diel, Dix, Bezi de la Motte, Surpasse Virgalieu, Long Green, Glout Morceau. *Plums,*—Coe's Golden Drop. Orange and Pear Quinces.

Stephen Driver, Salem. *Pears,*—Winter Nelis, Seckel, St. Michaels, Beurre Bosc, Flemish Beauty, Gansel's Bergamot, St. Ghislain, Easter Bergamot, Louise Bonne de Jersey, Althorp Crassanne, Andrews, Bartlett, Lewis, Washington, Marie Louise, Long Green, Heathcot, Urbaniste, Columbia, Messire Jean, Pound, Bleeker's Meadow, Belle Lucrative, and ten varieties without name. *Apples,*—Hubbardston Nonsuch, Porter, Red Pearmain, Golden Russet, and five varieties unknown. *Grapes,*—Black Hamburg, White Hamburg, White Muscat of Alexandria. *Peaches,*—Royal George.

B. H Silsbee, Salem. *Pears,*—Bartlett, Harvard, Louise Bonne de Jersey, Seckel, Marie Louise, Urbaniste, Messire Jean, Bishop's Thumb, Bleeker's Meadow, Monsieur le Cure, Swan's Orange, Flemish Beauty, Paradise d' Automne, Passe Colmar, Glout Morceau, Easter Beurre.

J. H. Phippen, Salem. *Pears,*—Bartlett, Belle Lucrative, Beurre d' Amanlis, Lewis, Raymond, Louise Bonne de Jersey, Golden Beurre of Bilboa, Washington, Beurre Diel, Ducchesse d' Angouleme, Beurre d' Aremberg, Columbia. *Peaches,*—Early Crawford, Pourpree Hative.

Geo. D. Phippen, Salem. *Pears*,—Bartlett, Beurre d' Amanlis, Louise Bonne de Jersey, Beurre Diel.

W. D. Pickman, Salem. *Pears*,—Long Green, Brown Beurre, Belle Lucrative, Lewis, Washington, Bartlett, Andrews, Dix, Harvard, Duchesse d' Angouleme, Louise Bonne de Jersey, Urbaniste, Gansel's Bergamot, Seckel, Flemish Beauty, Golden Beurre of Bilboa, Beurre Diel, two varieties unknown. *Plums*,—Coe's Golden Drop.

N. B. Mansfield, Salem. *Pears*,—Beurre Bose, Henri Quatre, Winter Nelis, Brown Beurre, Beurre d' Aremberg, Urbaniste, Capiaumont, Beurre d' Amanlis, Louise Bonne de Jersey, Surpasse Virgalieu, Bartlett, Wilkinson, Gansel's Bergamot, Beurre d' Angleterre, Cushing, Bon Chretien Fondante, Moccas, Seckel, Washington, Josephine, Golden Beurre of Bilboa, Heathcot, Flemish Beauty, Glout Morceau, Harvard, Fulton, Messire Jean, Wilkinson, Rousselet de Rheims, Belle et Bonne, Paradise d' Automne. *Apples*,—Danvers Winter Sweet, Tolman's Sweeting, Belle et Bonne, Osgood's Favorite, Red Calville, Minister, Leavitt, Marquis, Drap d' Or, Kentish Full Basket, Ortley Pippin, Porter, Alexander. *Seedling Peach*,—Old Zack. *Plums*,—Wilkinson.

H. F. King, Salem. *Pears*,—Colmar d' Aremberg, Groom's Princess Royal, Louise Bonne de Jersey, Beurre Diel, Duchesse d' Orleans, Van Mons Leon le Clerc, Paradise d' Automne, Jalousie de Fontenay Vendee, Dunmore, Moccas, Passe Colmar.

Henry Wheatland, Salem. *Pears*,—Bartlett, Seckel, Gansel's Bergamot, Urbaniste, Napoleon, Beurre Diel, Passe Colmar, Monsieur le Cure, Chaumontelle, Pound, Winter Nelis, two varieties unknown.

Wm. F. Gardner, Salem. *Pears*,—St. Ghislain, Golden Beurre of Bilboa, Swan's Orange. *Apples*,—Porter. *Peaches*,—Snow.

Geo. C. S. Choate, Salem. Bartlett Pears. *Apples*,—unknown.

Miss E. Fabens, Salem. Kilham Hill Apples.

Mercy Upton, Salem. Orange Pears.

M. A. Stickney, Salem, Seedling Peaches.

Jos. S. Cabot, Salem. *Pears*,—Belle Cratenaise, Belle Excellente, Beurre Bronze, Celestin, Josephine de Malines, Wredaw, Bergamot libitent verte, Doyenne Goubault, Poire His, Beurre d' Amanlis, Winter Nelis, Catillac, Vesouziere, Belle d' Esquermes, Notaire Minot, Dundas, Dunmore, Waterloo, Althorp Crassanne, Golden Beurre of Bilboa, Hericart, Washington, Quillette, Doyenne Boussock Nouvelle, Nouveau Poiteau, Lawrence; Van Buren, Dallas, and Calhoun *of Gov. Edwards:* Fig Extra Van Mons, Smith's Pennsylvania, Iron Pear of Worcester, Messire Jean, St. Ghislain, Jalousie de Fontenay Vendee, Jalousie, Gansel's Bergamot, Autumn Bergamot, Welbeck's Bergamot, Capiaumont, Surpasse Virgalieu, Cabot's Seedling, Paradise d' Automne, Urbaniste, Marie Louise, Marie Louise Nova, Beurre de Beaumont, Verte Longue d' Automne, Long Green, Green Sugar, Mons. Le Cure, Louise Bonne de Jersey, Doyenne d' hiver, Enfant prodige, Capucin Van Mons, Thompson, Bon Chretien fondante, Bezi de la Motte, Passe Colmar, Chartreuse, Paquency, Truickhill's Bergamot, Brande's St. Germain, Colomb's Winter, Andrews, Comte de Lamy, Boucquia, Great Citron of Bohemia, St. Andre,

Fondante d' Automne, Fulton, Hessel, Henri Quatre, Beurre Diel, Alpha, Bartlett, Muscadine, Green Pear of Yair, Wilkinson, Columbia, Capsheaf, Beurre d' Aremberg, Croft Castle, Lewis, Cross, Gendesceim.

J. Fisk Allen, Salem. *Grapes*,—August Muscat, Josling's St. Albans, Whortley Hall Seedling, White Frontignan, Wilmot's Black Hamburg No. 16, Royal Muscadine, Wilmot's New Black Hamburg, White Gascoigne, White Nice, Black St. Peters, Chasselas de Fontainbleau, Black Hamburg, Bishop, Red Chasselas, Rose Chasselas, Golden Chasselas, Chasselas de Bar sur Aube, De Candolle, Black Prince, Red Traminer, Grizzly Frontignan, Isabella (under glass.) *Pears*,—Coffin's Virgalieu, Belle Lucrative, Bartlett, Flemish Beauty, Beurre Bosc, Gansel's Bergamot, Beurre Diel, Seckel, Marie Louise, Urbaniste. *Lemons*. *Figs*,—Black Brunswick. *Nectarines*,—Golden.

Ephraim Emmerton, Salem. *Pears*,—Monsieur le Cure, Bartlett, Frederic de Wurtemberg, Flemish Beauty, Duchesse d' Angouleme, Glout Morceau, Swan's Orange, Louise Bonne de Jersey, Beurre d' Amanlis, Passe Colmar, Beurre Diel, Beurre d' Aremberg, Urbaniste, Marie Louise, Belle Lucrative, Golden Beurre of Bilboa, Easter Beurre, Bishop's Thumb, Long Green, Muscadine, Rousselet de Meester, Capiaumont, Gansel's Bergamot, Figue de Naples, Pitt's Prolific, Prince's St. Germain, St. Michaels, Capsheaf, Princess of Orange, Beurre de Beaumont, Surpasse Virgalieu, Henri Quatre, Washington, Seckel, Las Canas, Winter Nelis, Beurre d' Angleterre, St. Ghislain, Julienne, Dearborn's Seedling; and a basket containing labeled specimens of forty varieties of pears.

James Upton, Salem. *Pears*,—Bartlett, Washington, Seckel, Jean de Witte, Passe Colmar, St. Ghislain, Plombgastel, Petre, Quilletette, Doyenne Louis, Chaumontelle, Beurre Rance, Bonne de Zees, Bon Chretien Fondante, Beurre de Beaumont, Vicomte de Spoelberch, Winter Nelis, Summer Thorn, St. Andre, Raymond, Long Green, Lewis, Henri Quatre, Andrews, Ferdinand de Meester, Duchesse d' Orleans, Comperette, Catillac, Brande's St. Germain, Beurre d' Anjou, Beurre d' Amanlis, Beurre Diel, Belle Lucrative, St. Michaels, Messire Jean, Urbaniste, Duchesse de Mars, Easter Beurre, Frederic de Wurtemburg. *Grapes*,—Black Hamburg, White Chasselas, Red Chasselas, White Frontignan.

John Bertram, Salem. *Pears*,—Capiaumont, Frederic de Wurtemberg, Flemish Beauty, King Edward, Dunmore, Winter Nelis, Belle Lucrative, Knight's Monarch, Marie Louise, Colmar d' Aremberg, Doyenne Musque, Louise Bonne de Jersey. *Grapes*,—Zinfindal, Black Hamburg, White Chasselas, Red Chasselas. *Peaches*,—Early Crawford, and two varieties unknown.

David Roberts, Salem. *Pears*,—Bartlett, Beurre Bosc, Paradise d' Automne, Winter Nelis, Comte de Lamy, Louise Bonne de Jersey, Passe Colmar, Lawrence, Seckel, St. Ghislain, Fulton, Thompson, Capiaumont, Chaumontelle (?), Marie Louise, Golden Beurre of Bilboa, Moccas, Van Mons Leon le Clere, Surpasse Virgalieu, Easter Beurre, Las Canas, Flemish Beauty, Gansel's Bergamot, Urbaniste, Capsheaf, Dunmore.

Oliver Thayer, Salem. *Pears*,—Belle et Bonne, Bonne de Zees, Wilkinson, Monsieur le Cure, Belle Lucrative, Gansel's Bergamot. *Apples*,—Golden Russet, Hubbardston Nonsuch.

N. Weston, Salem. *Pears*,—Flemish Beauty, Pound, Catillac.

W. G. Lake, Topsfield. *Pears*,—Fulton, Dearborn's Seedling, Bartlett, St. Michaels, Flemish Beauty, Winter Nelis, Cushing, Long Green, Frederic de Wurtemberg, Belle Lucrative, Golden Beurre of Bilboa, Napoleon, Andrews, Louise Bonne de Jersey, St. Ghislain, Harvard, Dunmore, Glout Morceau, Beurre Diel, Duchesse d' Angouleme, Seckel, Easter Beurre, Monsieur Le Cure, Buffum, Dix, Catillac, Beurre d' Amanlis, and five seedling varieties. *Apples*,—Perkins' Sweet, Minister, Danvers Winter Sweet, Golden Russet, Baking Sweet, York Greening, Cart House, Spitzenberg, Red Eagle, Striped Sweet, Kilham Hill, Jenny Lind (seedling), Fall Harvey, York Russet, Baldwin, Alexander, Winter Green, Yellow Bellflower, Porter, Rhode Island Greening, Russet Pearmain, Roxbury Russet, Hubbardston Nonsuch, Aunt Hannah, White Bellflower, Ribston Pippin, Golden Queen, Gilliflower, Jenkins' Sweet, Jennett Red, Pippin, Autumn Red, and six seedling varieties. *Peaches*,—Jaques, Walter's Early, Manning's Red, Yellow Alberge, Napoleon, Crawford's Early, Jenks' Red, and five seedling varieties. *Plums*,—Green Gage, Prince's Imperial, Blue Imperatrice, Orleans. *Grapes*,—Three varieties cultivated native. Orange Quinces.

Moses Pettengill, Topsfield. *Pears*,—Beurre Diel, Beurre Bose, Urbaniste, Orange, Winter St. Germain, Wilkinson, Golden Beurre of Bilboa, Pope's Russet, Wilbur, Bartlett, Harvard, Winter Nelis, Bezi de la Motte, Seckel, Passe Colmar, Marie Louise, Pound, Gansel's Bergamot, Dearborn's Seedling, St. Ghislain, Napoleon, Cushing, Beurre Bronze. *Apples*,—Blue Pearmain, Russet Pearmain, Golden Pearmain, Porter, Honey Pink, White Queening, Red Queening, Pettengill Pippin, Warner, Rhode Island Greening, Baldwin, Sopsavine, Aunt Hannah, Danvers Winter Sweet, Hubbardston Nonsuch, Kilham Hill, Roxbury Russet, Baking Sweet, Putnam Harvey, High top Sweeting, Ribston Pippin, Cathead, Lime, Newbury Blush, Perkins' Long, Dutch Codlin, Andrews, Golden Russet, Lenox Red Winter, one seedling variety. *Peaches*,—Seventeen seedling varieties, Jenny Lind (seedling), Jenks' Rareripe, Crawford's Early, Late Admirable, Lee's Rareripe, Prince's Rareripe, Yellow Rareripe, Jenks' Red Rareripe, Grosse Mignonne, Morris' White, Sprague's Rareripe, President, Red Freestone, Malta. *Quinces*,—Orange, and Portugal.

Andrew Lackey, Marblehead. *Pears*,—Belle Lucrative, St. Ghislain, Urbaniste, Delices de Jodoigne, Belle et Bonne, Frederic de Wurtemburg, Hessel, Bonequia, Henri Quatre, Van Mons Leon le Clere, Andrews, Dunmore, Golden Beurre of Bilboa, Dearborn's Seedling, Bon Chretien Fondante, Great Citron of Bohemia, Napoleon, Capiaumont, Surpasse Marie, Comte de Lamy, Knight's Monarch, Bleeker's Meadow, Althorp Crassanne, Bartlett, Swan's Egg, Long Green, Beurre d' Amanlis, Passe Colmar. *Apples*,—Ribston Pippin, Bourdin Noir, Aunt Hannah, Pierce, Yellow Bellflower, Benoni, Porter, Canadian, Reinette, Reinette Triomphante. *Plums*,—Italian Prune, Downton Imperatrice, Corse's Field Marshal, St. Catharine's, Frost Gage, German Prune.

James Eustis, South Reading. *Apples*,—Baldwin, Minister, Ben, Trunnel, Columbian Pippin, Maiden's Blush, York Russet, Summer Sweet Para-

dise, Danvers Winter Sweet, Kilham Hill, Dutch Codlin, Jewett's Red, Winter Green, Porter, Fall Harvey, Canada Red, Hubbardston Nonsuch, Golden Ball, Roxbury Russet, Winter Russet, Spice, Boxford, Rhode Island Greening, and three varieties unknown.

E. A. Mudge, Lynn. *Pears*,—Louise Bonne de Jersey, Passe Colmar, Beurre Diel, Duchesse d' Angouleme, Long Green of Autumn, Belle et Bonne. *Grapes*,—Black Hamburg, Grizzly Frontignan, Sweetwater.

E. Brown, Lynn. *Pears*,—Summer Thorn, Pitt's Prolific, Seckel, Iron, Pound, McLaughlin, Winter Nelis, Bleeker's Meadow, Fulton, Harvard, Surpasse Virgalieu, Long Green, Frederic de Wurtemburg, Bergamot, Columbia, Beurre d' Aremberg, Flemish Beauty, and a large basket of various kinds. *Apples*,—Minister, Gravenstein, Rhode Island Greening, Red Astrachan, York Russet, Baldwin, Hubbardston Nonsuch, Porter, Mexico, Blue Pearmain, Swaar, Seaver's Sweet, one variety unknown, and a large basket of various specimens, handsomely arranged.

S. C. Pitman, Lynn. *Pears*.—Bartlett, Julienne, Orange, Belle de Bruxelles, Brown Beurre, Seckel, Doyenne Gris, Jalousie de Fontenay Vendee, Bon Chretien Turc, Louise Bonne de Jersey, Duc de Bordeaux, Chaumontelle, and five varieties unknown. *Apples*,—Baldwin, Danvers Winter Sweet, Kilham Hill, Fall Harvey, one variety unknown.

Mark Healey, Lynn. Specimens of forty-six varieties of Pears, without names.

Henry M. Barker, Salem. *Pears*,—Flemish Beauty, Dearborn's Seedling, Johonnot (?), St. Ghislain.

J. G. Treadwell, Salem. *Pears*,—Buffum, St. Ghislain, Seckel. Minister Apples.

Thos. Downing, Salem. *Pears*,—Louise Bonne de Jersey, Passe Colmar.

J. H. Nichols, Salem. *Pears*,—Capiaumont, Louise Bonne de Jersey, Marie Louise, Messire Jean, Flemish Beauty, Quilletette (?), Cabot, Duchesse d' Angouleme, Brown Beurre, Gansel's Bergamot, Beurre Diel. Gloria Mundi Apples.

Geo. Nichols, Salem. *Pears*,—Dix, Bartlett, Passe Colmar.

Mrs. Geo. D. Clark, Salem. Peaches, and Harvard Pears.

Wm. Webb, Salem. Orange Pears.

Jos. Brown, Jr., Lynn. Bartlett Pears.

James Arrington, Salem. *Pears*,—Washington, Golden Beurre of Bilboa, Long Green, St. Ghislain, Marie Louise, Belle Lucrative, Urbaniste, Bartlett, Andrews, Seckel, Paradise d' Automne.

Mrs. Thos. D. Brace, Salem. Peaches.

Benja. Shaw, Lynn. Monsieur le Cure and Bartlett Pears.

A. Thorndike, Salem. Passe Colmar Pears. Orange Pear Quinces.

Caleb Warner, Salem. Bartlett Pears.

J. Shed, Danvers. *Apples*,—Shed's Seedling.

Benja. Symonds, Danvers. *Pears*,—Bacon's Incomparable, Marie Louise, Long Green. *Apples*,—Williams' Favorite. *Peaches*,—Early Crawford, and two seedling varieties. *Grapes*,—Sugar. *Plums*,—Blue Imperatrice.

Eben. M. Taylor, Danvers. Comte de Lamy Pears. Native Grapes. *Peaches*,—Early Crawford, and four varieties of seedlings.

David Baker, Andover. Bartlett Pears. *Apples*,—Cathead, Baldwin, Fall Pearmain.

John Hovey, Salem. Gage Tomatoes.

A. G. Bradstreet. *Peaches*,—Jenks' Rareripe, Malta, Early Crawford.

Jarvis Lamson, Hamilton. Detroit Apple (supposed).

Wm. Stearns, Salem. *Pears*,—Endicott, St. Ghislain, Gansel's Bergamot, Summer Thorn, Orange, Louise Bonne de Jersey, Wilkinson, Belle Lucrative, Seckel, Ronville, March, Chaumontelle, Platt's Bergamot, Long Green, Bartlett, Flemish Beauty, Long Green of Autumn, Harvard, Rousselet de Rheims, Chelmsford, Urbaniste, Beurre Bosc, Bishop's Thumb, Golden Beurre of Bilboa, Winter Nelis, Brown Beurre, St. Michael, Summer Francreal, Surpasse Virgalieu, St. Germain, and two varieties unknown. *Apples*,—Jarvis Winter, Monstrous Pippin. Orange Quinces.

Wm. B. Parker, Salem. Frederic de Wurtemburg Pears.

Richard S. Rogers, Salem. Peaches, unknown.

P. Wait, North Danvers. Minister, and Killam Hill Apples.

A. Nichols, Danvers. Fall Harvey Apples.

Benjamin Porter, Danvers. Endicott Pears from the original tree. Endicott Apples.

R. A. Merriam, Topsfield. Apples from Miss Sybil White of Marshfield, from a tree planted by Peregrine White.

Edward A. Saunders, Salem. Orange Pears from a tree two hundred and ten years old, in Hardy street.

A. L. Pierson, Salem. Catillac, and Louise Bonne de Jersey Pears.

Elnathan Dodge, Beverly. Cathead Apples.

Allen W. Dodge, Hamilton. *Apples*,—Minister, Kerry Pippin, Winter Russet Sweet, Lebanon Sweeting, Danvers Winter Sweet, Fameuse, Baldwin, Hubbardston Nonsuch, Winter Sweet. Blue Imperatrice Plums. Orange Quinces.

J. W. Treadwell, Salem. *Pears*,—Gansel's Bergamot, Seckel, Ambrette, Messire Jean, Chaumontelle, Brown Beurre, Catillac, Bartlett. Apples, unknown.

Thorp Fisher, Salem. *Pears*,—Long Green of Autumn, Passe Colmar, Seckel, St. Michael, Napoleon. Isabella Grapes.

Wm. C. Barton, Salem. *Pears*,—Seckel, Brown Beurre, Josephine, Andrews, Bartlett, Flemish Beauty. Isabella Grapes.

Miss Caroline Baldwin, Salem. *Apples*,—Spice, Monstrous Pippin, Blue Pearmain, Rhode Island Greening.

D. A. White, Salem. Pound Pears.

Mrs. Elizabeth Porter. Bartlett Pears.

F. H. Burbank. Haskell's Sweeting Apples.

Chas. A. Ropes, Salem. *Pears*,—Bartlett, Passe Colmar, Beurre d' Amanlis, Louise Bonne de Jersey, Andrews, Beurre Diel.

J. J. Ashby, Salem. *Pears*,—Louise Bonne de Jersey, Marie Louise, Passe Colmar, Glout Morceau. Ribston Pippin Apples.

J. G. Sprague, Salem. Late Crawford Peaches.

Samuel Kemp, Salem. Seckel and Bartlett Pears.

David Perkins, Salem. *Pears*,—Frederic de Wurtemburg, Washington, Bartlett.

Daniel C. Bowditch, Salem. Seedling Peaches.

Winthrop Sargent, Salem. *Pears*,—Washington, Gansel's Bergamot, Belle Lucrative, Capiaumont, Bartlett, Frederic de Wurtemburg, Golden Beurre of Bilboa, Cushing, Buffum, Passe Colmar, Winter Nelis, Easter Beurre, Seckel, Napoleon, Glout Morceau, Urbaniste, Louise Bonne de Jersey, Henri Quatre, Flemish Beauty, Brown Beurre, Johonnot, Lawrence.

J. C. Howard, Salem. Early Crawford Peaches.

S. Webb, Salem. Peaches.

J. Pratt, Salem. Beurre Bosc and Belle Lucrative Pears.

Timothy Ropes, Salem. *Pears*,—Golden Beurre of Bilboa, Washington, Louise Bonne de Jersey, Beurre Bosc, Bartlett.

Stephen Carlton, Lowell. St. Michaels Pears. Jaques Peaches.

P. P. Pinel, Salem. Monsieur le Cure Pears.

Augustus Story, Salem. Seedling Peaches.

B. F. Ives, Salem. Bartlett Pears.

John Alley, 3d., Lynn. Chelmsford Pears, grown on apple stock.

S. Russell, Middleton. Two varieties of Peaches.

G. Creelman. *Apples*,—Rhode Island Greening, Kilham Hill, Russet Pearmain, Baldwin, Fall Harvey.

Israel Trask, Beverly. *Apples*,—Hubbardston Nonsuch (?).

James Mills, Salem. Bartlett Pears. Three varieties of Apples. Native Grapes.

E. S. L. Richardson, Kendall, Ill. *Apples*,—Golden Russet, Stannard's Seedling, Conant's Red Winter Sweet, Native Crab of Illinois.

Mrs. Sarah Mann. *Apples*,—Russet, Greening, and one unknown Pippin.

Thomas Holmes, Salem. *Pears*,—Bartlett, and one variety unknown. Two varieties of Peaches.

Joseph A. Goldthwaite, Salem. *Pears*,—Louise Bonne de Jersey, Long Green, Flemish Beauty, Seckel, St. Michaels.

Samuel Honeycomb, Salem. *Pears*.—Bartlett, Flemish Beauty, Frederic de Wurtemburg, Duchesse d' Orleans, Julienne. Bergen's Yellow Peaches.

William Sawyer, Boxford. Lombard Plums. Yellow Alberge Peaches.

G. W. Gage, Methuen. *Apples*,—Seedling, Porter, President, Bean, Rhode Island Greening, Gilpin, Baldwin, and four varieties unknown. *Peaches*,—Yellow Rareripe, Bergen's Yellow, Jaques, George Fourth, four seedling varieties.

Samuel Sawyer, Methuen. Peaches.

M. L. Atkinson, Lawrence. Six varieties of Peaches. Baldwin Apples. Native Grapes.

J. D. Waters, Salem. Bartlett Pears.

A. Edwards, Beverly. Bartlett and Seckel Pears. *Apples*,—Golden Russet, and two seedlings.

E. Shaw, Beverly. *Apples*,—Gloria Mundi, Baldwin, and one variety unknown.

R. Franks, Salem. Coe's Golden Drop Plums. Peaches.

D. Putnam, Danvers. *Apples*,—Snow, Aunt Hannah, President, Fall Harvey, Sweeting, Golden Russet, Kilham Hill, Porter, and one variety unknown. Beurre d' Amanlis Pears.

Benjamin P. Ware, Marblehead. *Apples*,—Porter, Ribston Pippin, English Red Pearmain, Bean, Rhode Island Greening, Drap d' Or, Pickman Pippin, Baldwin, and one variety unknown.

William H. Foster, Salem. Buffum Pears. Peaches. Russet Pearmain and Rhode Island Greening Apples.

F. W. Tuttle, Salem. Jalousie and Figue de Naples Pears. *Apples*,—Minister, Ribston Pippin, Golden Russet, Rhode Island Greening, Roxbury Russet, Porter, Kilham Hill, Pumpkin Sweeting, Hubbardston Nonsuch.

John Henfield, Salem. Alexander Apples.

John Brooks, Salem. Danvers Winter Sweet and Baldwin Apples.

Israel Rea, Topsfield. Apples, unknown.

Samuel T. Huse, Lynn. *Pears*,—Catillac, Duchesse d' Angouleme, Golden Beurre of Bilboa, Bartlett.

Moses Prince, North Danvers. *Apples*,—Sweeting, Porter. Seedling Peaches.

James Clark, Salem. Louise Bonne de Jersey Pears.

N. Kelley, Salem. Chelmsford Pears.

S. C. Phillips, Salem. *Pears*,—Long Green, Seckel, Andrews, Buffum *Figs. Lemons.*

Porter J. Gould, Middleton. *Apples*,—Winter Sweet, Mammoth Pippin, Queening. Seedling Peaches.

R. Becett, South Danvers. Peaches.

Nathan Cook, Salem. *Pears*,—Andrews, and one variety unknown. *Apples*,—Ribston Pippin, Danvers Winter Sweet.

Andrew Dodge, Wenham. *Apples*,—Gravenstein, Hubbardston Nonsuch, Gloria Mundi, Sweet Baldwin, Minister, Fameuse, Rambour d' ete. *Pears*,—Bergamot, Winter Nelis, Long Green, Catillac.

James F. Mann, Ipswich. Bartlett Pears. Golden Russet Apples.

James Peatfield, Ipswich. Pike Pearmain Apples.

Mrs. T. Sanders, Salem. Gansel's Bergamot Pears.

C. M. Bayley, Newburyport. Bartlett Pears.

J. Hood, Salem. Seedling Apples.

James A. Breed, Lynn. *Pears*,—Monsieur le Cure, Duchesse d' Angouleme, Flemish Beauty, one variety unknown.

Henry Poor, North Andover. Flemish Beauty Pears. Porter Apples. *Peaches*,—Royal George, Early Red Rareripe.

F. Howes, Salem. Beurre Bose and Virgalieu Pears.

Ezra Dodge, Wenham. Bartlett Pears. *Apples*,—Kilham Hill, Roxbury Russet, Golden Russet, Red Reading. *Nectarines.*

A. T. Wellman, Lynn. Bartlett Pears.

John R. Poor, Danvers. Golden Beurre of Bilboa Pears.

R. T. Sims. Seckel and Bartlett Pears. Porter Apples.

Joseph Dalton, Salem. *Pears*,—Duchesse d' Angouleme, Napoleon. *Apples*,—Bellflower, Hubbardston Nonsuch. Isabella Grapes.

S. B. Ives, Salem. *Pears*,—Pound, Long Green, Seckel. *Nuts*,—European Walnuts.

J. Berry, Middleton. Golden Beurre of Bilboa Pears. Seedling Grapes. *Apples*,—Porter, York Russet, Baldwin, Greening, Ribston Pippin.

J. Adams, Newbury. Native Grapes.

T. Dixon, Salem. Several varieties of Pears grown on Mountain Ash stock.

Rufus Slocum, Haverhill. Nectarines.

Horace C. Ware, Salem. President Apples.

Abel Burnham, Gloucester. Two varieties of native seedling Grapes.

H. Mason, Marblehead. Fall Harvey Apples.

J. Dempsey, Danvers. Drap d' Or, and Hubbardston Nonsuch Apples, Seedling Peaches.

James D. Black, Danvers. Danvers Winter Sweet Apples.

N. G. Symonds. Red Magnum Bonum Plums.

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## FLOWERS.

James Upton, Salem. *Dahlias*,—Lady St. Maur. Salvia fulgens, Salvia splendens. Geraniums, Verbenas, &c.

W. A. Wallis, Salem. Bouquet of Dahlias, Asters, Gladiolus, Hemerocallis, &c.

Eben F. Taylor, West Danvers. Marigolds.

Miss R. S. Ives, Salem. Bouquet of Neottia cernua.

Miss E. S. Mann, Salem. Bouquet of Dahlias, Marigolds, &c.

Mrs. J. D. Treadwell, Salem. Asters, Dahlias, Marigolds, Gladiolus, Hemerocallis, Verbenas, &c.

Miss M. R. Kimball, Salem. Gentiana crinita.

George Driver, Salem. *Dahlias*,—Cleopatra, Dodd's Prince of Wales. Oakley's Surprise, Standard of Perfection, Caleb Cope, Lady St. Maur, Essex Triumph, Eclipse, Primrose, Argo, &c.

T. Fisher, Salem. *Dahlias*,—Indispensible White, Pickwick, Lady St. Maur, Catleugh's Eclipse, Princess Radzville, Cheltenham Queen, Viscount Ressequier, &c.

Stephen Driver, Salem. Pansies.

George Pettengill, Topsfield. Dahlias.

Miss M. L. Mellus, Salem. Verbenas, Asters, Dahlias, &c.

Eben Buswell, Salem. *Dahlias*,—Beauty of Birmingham, Cleopatra, Sir Edward Antrobus, Admiral Stopford, Oakley's Surprise, Viscount Ressequier, Pickwick, Lady St. Maur, Indispensible White, &c.

William Weeks, Salem. *Dahlias*,—Mrs. Rushton, Argo, Striata, &c. Also, Stocks, Asters, &c.

Stephen Webb, Salem. *Dahlias*,—Admiral Stopford, Pickwick, Caleb Cope, Catleugh's Eclipse, Marshal Soult, Ansel's Unique, Mackenzie's Perfection, &c.

B. GARDNER, Salem. *Dahlias*,—Indispensible White, Cleopatra, Striata, Marshal Soult, Pickwick, Horace Binney, Argo, &c.

MISS CAROLINE A. MORSE, Methuen. Five bouquets of Dahlias.

T. ROPES, Salem. *Dahlias*,—Gurling's Prince of Wales, Lady Von Brandestein, Lady Ann Murray, Fireball, Beeswing, Constantia, Indispensible White, Catleugh's Eclipse, Princess Radzville, &c.

GEORGE W. GAGE, Methuen. Bouquet of Dahlias.

A. L. PEIRSON, Salem. *Dahlias*,—Striata, Gurling's Prince of Wales, Cleopatra, Premier, Ithuriel, &c.

MICHAEL RYAN, Salem. Bouquet of Dahlias, Stocks, Phlox, Maurandia Barclayana, Petunias, Antirrhinum, &c.

MISS WILSON, Saugus. Marigolds, Asters, Hollyhocks, &c.

FRANCIS PUTNAM, Salem. *Roses*,—La Reine, Duchess of Sutherland, Aubernon, Baron Prevost, Madame Laffay, Madame Dámame, Mrs. Eliot, Devoniensis, Bon Silene, Bossuet, Anne Boleyn, &c. *Dahlias*,—Beeswing, Arethusa, Picotee, Duchess, Cheltenham Queen, Marchioness of Exeter, Unique, &c. Also, Verbenas, Asters, Chryseis, Zinnias, &c.

ANDREW DODGE, Wenham. *Dahlias*,—Pickwick, Sulphurea Elegans, Argo, Widnal's Queen, Calypso, &c.

MISS SARAH H. ROPES, Salem. Bouquets of Dahlias, Asters, Phlox, Golden Eternal Flower, Hemerocallis, &c.

NICHOLAS BOWLER, Lynn. Design of a Harp in natural flowers.

EDWARD D. ROPES, Salem. *Dahlias*,—Master George Clayton, Fireball, Indispensible White, &c.

JOHN BERTRAM, Salem. *Dahlias*, — Ithuriel, Cleopatra, Cheltenham Queen, Constantia, Marshal Soult, Miss Perceival, Striata, &c.

T. DALAND, Salem. *Dahlias*,—Argo, Mrs. Rushton, Striata, &c.

FRANCIS WADE, Ipswich. Bouquet of Dahlias, Honeysuckles, Asters, &c.

MRS. T. SANDERS, Salem. Bouquet of Dahlias.

SIMON RYAN, Salem. Bouquet of Phlox, Dahlias, Petunias, Marigolds.

HENRY K. OLIVER, Lawrence. *Dahlias*,—very superior flowers, among which were Madame Zahler, Jenny Lind, Roi des Pointelles or King of Tips, La Tour d' Auvergne, Miss Vyse, Mrs. Blackburn. Also, Cobea scandens, Phloxes, Asters, &c.

MRS. JOSEPH G. WATERS, Salem. Bouquet of Dahlias, Marigolds, Asters, &c.

ALEXANDER DONALDSON, Salem. *Dahlias*,—Argo, Marshal Soult, Constantia, &c.

JOSEPH WILKINS, Salem. Bouquet of Dahlias, &c.

JAMES H. HOLMES, Salem. Bouquets of Fuchsias, Phlox, Lilies, Dahlias, Asters, Coreopsis, Antirrhinum, Sedum, Trollius, &c.

JOSEPH S. CABOT, Salem. Tradescantia virginica, Gaillardia aristata, Aconitum chinense, Catanancha bicolor, Œnothera macrocarpa. Phloxes; Alcardi, Princess Marianne, and Blanche de Neuily; Antirrhinum majus five varieties of, Trollius americana, Pansies, &c.

H. WHEATLAND, Salem. *Dahlias*,—Sir Edward Antrobus, Marquis of Cornwallis, Roi des Pointelles, Lady Ann Murray, Viscount Ressequier, An-

tagonist, Eclipse, Indispensible White, Mrs. Shelley, Ithuriel, &c.; also, Gladiolus floribundus, and natalensis, Asters, Verbenas, Stocks, Honeysuckles, &c.

John C Lee, Salem. *Roses*,—Hermosa, Agrippina, General Dubourg, Le Brun, Pierre de St. Cyr, Mrs. Bosanquet, Napoleon, Blush Tea, &c. *Dahlias*,—Marshal Soult, Ansel's Unique, Charles XII, Striata, Mrs. Rushton, Sulphurea Elegans, Premier, Constantia, &c.; also, Stocks, Asters, Verbenas, Penstemon, Lathyrus odoratus, Delphiniums, Antirrhinums, Zinnias, Balsamines, &c.

W. D. Pickman, Salem. Salvia splendens and fulgens, Achillea ptarmica, Helianthus grandiflorus, Viscaria oculata, Gomphrena globosa, Asters, Zinnias, Roses, Delphiniums, Celosias or Coxcombs, Antirrhinums, Pinks, &c.

John W. Downing, Salem. *Dahlias*,—Arethusa, Beeswing, Cleopatra, Cheltenham Queen, Lady of the Lake, Raphael, Mrs. Shelley, Marchioness of Ormond, Sir E. Antrobus, Pickwick, Constantia, &c. &c.

## POT PLANTS.

From E. H. Derby, Salem. Orange and Lemon trees, in fruit.

From W. D. Pickman, Salem. Achimenes rosea, and other varieties. Russelia juncea, Fuchsias, and Ericas, several varieties.

From F. Putnam, Salem. Metrosideros, Gloxinias, Achimenes, and Fuchsias, in varieties.

From J. M. Ives, Salem. Fig tree in fruit.

From C. W. May, Salem. Orange trees in fruit.

## VEGETABLES, &c.

A. Nesmith, Beverly. Seedling Potatoes. Beets.

A. Hatch, Saugus. Seedling Potatoes.

E. M. Taylor, West Danvers. *Potatoes*,—Peach Blow, and Early Nutmeg. Onions.

W. Poor, Andover. Black Potatoes, sample of eighty-five bushels, the product of one-third of an acre.

H. Mason, Marblehead. Marrow Squashes. Onions.

John W. Treadwell, Salem. Celery.

John M. Ives, Salem. Sweet Potatoes.

James Upton, Salem. Onions, Turnip Cabbage, Canada Crook Neck Squashes crop of 1849 and 1850.

A. A. Edgerton, Danvers. Sweet Potatoes.

John Clark, Salem. Millet, and Black Sea Wheat.

Jesse Estes, Middleton. Mountain Sprout Watermelon.

Jonas Harrington, Danvers. Marrow Squashes.

J. K. Haines, Salem. Crook Neck Squashes.

John Alley, 3d., Lynn. Averlene Cabbage.

John Trow, Hamilton. Marrow Squashes, six in number, two hundred and twenty-five pounds weight.

Mrs. S. Lord, Salem. Variety of Pickles.

P. Farmer, Salem. Crookneck Squash, last year's growth.

B. D. Hill, South Danvers, Tomatoes, and Snake Cucumbers.

Niles T. Phippen, Salem. Texas Corn.

M. L. Atkinson, Methuen. Corn.

Israel Rea, Topsfield. Corn.

Moses Pettengill, Topsfield. Corn.

Israel Trask, Beverly. Crook Neck Squash.

J. Burpee, Georgetown. Broom Corn.

E. R. Mudge, Lynn. Celery, Egg Plants, Tomatoes.

John Bradstreet, Danvers. Potatoes; planted two and a half bushels last year, and got seventy-five bushels, only five years from the seed.

Gilbert Conant, Ipswich. Southern Corn.

M. P. Atwood. Marrow Squashes, five in number, weight one hundred and twenty-two pounds, from one seed.

N. Woodbury, Salem, One Valparaiso Squash. weight thirty-five pounds.

Henry Poor, Andover. White Flint, and Red chaff Chili, and White chaff Chili Wheat.

W. G. Lake, Topsfield. Gourds.

A Cowdry, South Reading. Pumpkins.

W. Fairfield, Salem. Turnip Beets.

W. D. Pickman, Salem. Celery, and two mammoth Squashes, weight of the largest, eighty pounds—the smallest, fifty pounds.

## REPORT ON ESSAYS.

The Committee have examined the several Essays placed in their hands by the Secretary, without any inquiry by whom they were written, or whence they came. They understand the premiums to have been offered, for such essays on any Agricultural topic, as in their judgment, are worthy of publication. Three of those presented come fully up to the standard required, and consequently are entitled to the premium of ten dollars each.

The committee are pleased that this mode of diffusing information is so favorably estimated. It has now been continued, in this and other Societies, for several years, with marked approbation. They cannot doubt that experiments of this kind, embodying and condensing what has been learned, on a particular topic, may be quite as useful to those who engage in them, and to the public generally, as experiments in the cultivation of particular crops. In the one case, the cultivator finds his reward mainly in the crop produced,—in the other, the public are mainly benefitted, by the mental efforts of the author. He that applies the mind, to the improvement of society, is no less a working man, than he who labors with his hands,—all is labor for the general good.

In expressing their approbation of the papers presented, they would not be understood as ENDORSING all the statements or theories contained. These must stand or fall upon their own merits, or upon the credit of their authors;—but simply the general scope and execution. A prime quality in an essay, is close adherence to the subject, together with a complete comprehension of it. An address may speak of matters and things in general,—an essay should be limited to the subject under discussion, and should, as far as possible, without being diffuse, give a complete view of it. Several of the essays, heretofore approved by the Trustees, have been models worthy of imitation. And if we do not mistake, those now presented will be read with much interest and instruction.

The paper on "top dressing for mowing and pasture lands," is a fair illustration, of the committee's idea of a good essay.

It met the hearty approval of them all. Some queries arose in their minds as to the use of Gypsum, or Plaster of Paris, and the ashes of Anthracite Coal, as manures, nevertheless they will not venture to interpose their conjectures, in opposition to what may be presumed to be the results of well conducted experiments. The timely suggestion of hints to induce such experiments, may often be as beneficial as the experiments themselves.

The paper on "diaries, or farm accounts," (a subject alluded to in our Report the last year,) carries upon its face its own demonstration. Whatever is worthy of being remembered, is worthy of being recorded, both for our own benefit, and the instruction of those around us. The perusal of this essay brought distinctly to mind the practical illustration of this subject by Washington, and the theoretical suggestion by Colman, both of them teachers whose precepts will grow brighter by use. Whoever shall attempt to make such a record, will surely find therein an ample reward.

The paper "on the rearing of turkeys," cannot fail to awaken the most agreeable sympathies of every thankful heart. Where is the son of New England, who cannot cast his thoughts back to that period of his youth, when his eye glistened with the hope of the "fatted turkey," under the parental roof on "Thanksgiving Day,"—a time honored Puritan festival, that should never be forgotten. Whatever shall have a tendency to keep alive these customs of our fathers, is worthy of being cherished, especially when the suggestions bear indisputable evidence of being the result of actual observation. This too, we consider a good model of an essay.

The comparative merits of the different essays approved, and consequent labor in the preparation of the same, induces the suggestion, that in the offer of these premiums, a discretionary power should be given, to make the premiums proportionate to the value of the production, not exceeding a prescribed sum. This form of offer has been adopted by other Societies, and it appears to be worthy of imitation.

By order of the Committee.* J. W. PROCTOR.

Salem, Nov. 15, 1850.

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*F. Howes, of Salem, E. Mosely, of Newburyport, Rev. D. G. Estes, of Amesbury, J. Little, of Newbury, J. W. Proctor, of Danvers.

# ESSAY

## ON TOP DRESSINGS FOR MOWING AND PASTURE LANDS.

BY CHARLES L. FLINT.

Some soils must, from their nature, be kept in perpetual grass. Such are rough pastures, rocky hills, and low lands subject to frequent overflows. Stiff clay soils, too, require an amount of labor, in tilling, wholly disproportioned to the returns they yield. But these, if properly managed, may be made as productive, or nearly so, as the finer loams. Steep hills cannot be ploughed to advantage, since the best parts of the soil are washed away. Other lands, from their situation about the house or the cottage, cannot, conveniently, be tilled.

It becomes, then, a question of much practical importance to many, how these lands are to be improved? A course of interesting experiments which have come under our observation, have induced us to throw out the following hints, hoping they may be of use to those practical men who have not the time or the inclination to attempt doubtful experiments.

The difficulties which attend this subject arise from the necessity of using more or less of scientific terms in explaining the effect of particular applications to the soil. This will be avoided so far as it can be.

It is a matter of regret that the improvement of waste lands has not been treated in a manner which its importance deserves.* The idea was formerly entertained that pasture lands were sufficiently enriched by the animals which fed them. Practical men begin to think otherwise. It is found that a profitable return is made for the little outlay which they require. Particu-

* The practical effect of this inattention to the importance of waste and pasture lands may be distinctly traced in the eastern part of Massachusetts. Notwithstanding the rapid improvement in almost all other departments of agriculture, and the increase of arable lands, it will be admitted, I think, that a large part of our pasture lands are in a worse condition now than formerly. This subject is worthy to excite the attention of practical and scientific agriculturists.

larly is this the case with pastures fed by milch cows. They do not return the essential elements of the plant to the ground. These elements are required in great quantities to form their milk, while in other animals they are required only to form their bone and muscle. The ordure of cows is, therefore, far less valuable and fertilizing than that of other animals. The consequence is, that lands fed wholly by cows are exhausted much sooner than those fed by other animals. For it is evident that where more is taken from the soil than is returned to it, an exhaustion must eventually follow.*

We furnish animal and vegetable matters to the earth, to supply it with substances which the growth of plants has taken from it. It will be obvious, on a moment's reflection, that the constituent parts of the plant are taken up from the earth and the air, in much the same manner as our food and drink become our bone and flesh. The analogy is still more distinct when we reflect that all our applications for the improvement of the soil, are nothing more than the supply of food for plants.

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* The question whether milch cows exhaust the phosphates of the soil, is of somewhat recent date, and may, perhaps, be regarded as still unsettled. For my own part, reasoning from scientific principles, I cannot doubt it. There have been many and accurate analyses of milk, all showing a large amount of phosphate. This must be over and above what, in common with other animals, goes to form the bones. I hope to be able, at some future time, to bring some valuable statistics to bear on this subject. Whether this exhaustion of phosphates is directly connected as cause and effect, with the *bone disorder* in cows, is another interesting question. It has lately been very ably discussed in the New England Farmer, Vol. I, Nos. 22 and 25, and Vol. II, Nos. 3, 6, 9, &c.

I am not prepared to say that the so called bone disorder is the effect of exhaustion of phosphates in the soil, but the question is of such practical importance, that I cannot forbear a remark upon it. When, on old pastures, the phosphate is gone, the quantity necessary for milk, which is one of the most abundant secretions of the cow, must be absorbed from the bones, just as in case of a broken or fractured limb an absorption takes place from that limb by other parts of the body, leaving it smaller than before. This absorption of phosphate from the bones, must produce a weakness and debility of the system. Wherever this disorder has manifested itself, I would most confidently recommend the application to the pasture, of a mixture of leached ashes and bone dust in nearly equal proportions. This will both increase the quantity and quality of grass, and in case the bone disorder arises from want of phosphates, increase the health and strength of the cow.

For the food of plants is found in all manures, and the value of these depends upon the quantity they contain.

The methods of renovating mowing and pasture lands by means of top dressings, do not essentially differ. We have seen an interesting experiment during the present season. On different parts of the same field, simple meadow mud, rich barn manure, and liquid manure impregnated with lime, were used as a top dressing. The mud was hauled out last autumn and thrown in heaps, and there left to the action of the frosts and snows of winter. In spring it was spread nearly at the same time the other manure was applied. Strange as it may seem, the top to which the mud was applied, appeared to far the best advantage. The grass was heavier, and after the crop had been removed, that part of the field on which the mud was applied, came in more quickly and luxuriantly than the rest. This field was a light gravelly soil, which had not been under very high cultivation. A large proportion of the soils of Massachusetts are composed of gravel with a mixture of sand. These soils peculiarly need the constituents of marl and meadow mud. Marl and mud contain the carbonate, or in some cases the sulphate of lime, which is the same as plaster of Paris. They contain a large mixture of clay, which sandy or gravelly soils need. And on these soils clay mud has been found to do the best. Peat mud is a rich vegetable food, and if a small proportion of potash, or ashes, is added, it is nearly, if not quite, as valuable as the best barn manure. Light soils are always improved by any substances which make them firmer and more compact. Stiff clay soils, on the other hand, are benefitted by applications which make them lighter and more permeable. No one of the three kinds of earth, the sand, the clay, and the lime, when unmixed with the other varieties, would be capable of supporting vegetation. The mixture of them, when any one predominates, will correct and improve them. For the fertility of soils depends upon the proportion of their constituents. In some marls the clay predominates. These should be used on the light sandy soils. In others the sand predominates. These are adapted to stiffer lands. Here the judgment must be exercised. The practice of mixing soils has always been attended with success when judiciously manage[illegible]

Nor is this application of mud and clay any new fact to the practical agriculturist. It was practised in England nearly two thousand years ago. The county of Norfolk, in England, is said to owe much of its great fertility to this source. The greatest European improvements in sandy soils, have been made by these means, in Belgium. They do not operate so rapidly as quick lime, but their effect is far more lasting. So lasting, indeed, that our Anglo Saxon fathers thought they were felt for eighty years. As intimated in the experiment alluded to, it has always been found best to expose the mud or clay to the action of the frost. It becomes mellowed so that it may be spread evenly upon the ground. Peat mud is composed of vegetable matter which has been accumulating for ages. When taken fresh, it is found to contain an amount of acid which would make it improper for immediate use. Exposure to the frost, wind, and rain, entirely neutralizes the acid properties. Ashes, or potash, would have the same effect.

These substances may be said rather to ameliorate and improve the texture of soils than to furnish immediate sustenance to the plant. And in this view, they cannot be too strongly recommended, for we have never known them to fail of having the most beneficial effects, both on pasture and mowing lands. And besides, the application of them is so simple, so much within the reach of every farmer, that it is well worth the trial. If the soils are much worn, or very barren from a great preponderance of any particular earth, a liberal allowance will be required. Ordinarily, as in the experiments which have come under our notice, some twenty-five or thirty cart loads to the acre have been found sufficient to increase very greatly the productiveness of the land. A still less quantity would be of essential service. Nor is the expense of this application so great as some imagine, for almost every farm contains a quantity of waste peat meadow, and clay is almost always near at hand. It may be removed and prepared at a season of the year when there is but little else to do. The expense, therefore, need not deter any one from its use.

But there is another substance equally accessible, which acts both as an ameliorator and a fertilizer of the soil. It is, per-

haps, one of the cheapest and most profitable top dressings. It is the rich loam which accumulates in the holes by the road side, and wherever the wash gathers from hills. Every one has observed the effect of the loam thrown out upon the grass in ploughing. The grass along the edges soon becomes greener in spring, and grows with greater luxuriance. The wash by the road side would have a far more powerful effect. For this contains, besides the putrescent animal matters, from the road, a quantity of sand, which rich soils wanting closeness and consistency, require on the surface. Spread upon such soils when covered with grass, it is very efficacious, and makes the vegetation as vigorous as the most stimulating manure. Very many experiments have clearly shown that the effect of sand on such soils is better than any manure could be.

Among the mineral manures, lime is often used as a top dressing. We have seen this employed with good effect. We are inclined to think that this effect arises not from any direct nutriment furnished by it to the grass, but from its influence on the substances in the soil. It hastens the decomposition of vegetable matters in the earth. In this way it renews exhausted soils. It increases the temperature. Hence its great benefit on low, wet lands. It causes a rapid decay of all peat substances. Hence its great use in the compost heap. It destroys the mosses and coarse herbage which work in among the grasses, and indicate the want of lime in the soil. It produces from them a fine vegetable mould. Hence its utility on lands which are "run out."

If what has been said be true, it appears that lime can never supply the place of other manures. There are properties which it cannot supply, which plaster can; others which it cannot supply, as bones can; and others which it cannot supply like ashes, and manures that contain salts. There are situations, however, in which it is invaluable. On reclaimed meadow lands, after thorough draining, and a covering of three or four inches of gravel, a top dressing of lime has a most wonderful effect. Crops of grass of two and three tons to the acre, have been taken after such a dressing of lime. In many cases the first crop will repay the expense of bringing such

land into cultivation. In these situations, then, as well as on low pastures, it may be called one of the cheapest and most useful applications that can be made. Such lands will bear an abundant supply of lime, without exhaustion. Indeed, the effect of lime on these lands is better and more lasting than that of any other manure. But on poor sandy soils it should never be used. It will soon exhaust and render them completely barren. When it meets with clay in lands to which it it is applied, it forms a kind of marl, and greatly improves the texture of the soil. But when it comes in contact with sand, it forms, rather, a sort of mortar. Hence it is injurious on sandy soils. Many earths have naturally a sufficient quantity of lime. On these a further application is not needed.

No definite rule, with respect to the amount required, can be given. It must depend upon the nature of the soil, and must be left to the judgment of those who use it. In general, on peat and clay soils, from ten to fifty bushels to the acre will be required, though less would be beneficial.

The addition of lime to the compost heap, is always of the highest importance. The decay of all vegetable substances is greatly accelerated by it. We shall have occasion to allude to this hereafter.*

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* These opinions with reference to the use of lime, had been written before we had the satisfaction of finding that they agreed substantially with the views expressed by Prof. Playfair. Mr. Anderson, in the Journal of the Highland and Agricultural Society, for 1843, says: "Whether spread on the surface of pasture land alone, or in compost with earth, or applied with a crop and grass seeds, with a view to pasture, it never fails to call into existence the dormant seeds of the superior grasses in the soil, and to nourish and facilitate the growth of those that may have been confided to it by the agriculturist. This is a fact beyond dispute. It is a never failing fertilizer of grass land."

Prof. Playfair, speaking of the application of lime to grass land, says: "The farmer liberates, by this means, the silica, the potash, and the phosphates from the soil, and enables them to administer to the wants of vegetation. But by the operation, he has furnished no equivalent for that removed by the crops. The lime is the key, merely, by which you opened the magazine of food contained in the soil. But it not unfrequently happens, that it may itself supply an absent constituent of the soil, especially in cases such as clover and grasses which experience much benefit from this article. There is no manure more beneficially used or more disgracefully abused, than lime."

*European Agriculture, II, page* 361, *Note.*

We come now to the use of ashes as a top dressing. Of this we may speak with more confidence. For while experiments with lime have not invariably proved successful, owing, probably, to the soils designed to be benefitted, we know of no instances in which the application of ashes has not fully repaid the expense. If farmers would bear in mind that ashes contain all the elements which assist the growth of plants, they would be unwilling to part with a substance which they might turn to such profit. If the quantity is small, let it be husbanded with the greater care, instead of being sold, with the idea that so few can do no good. One substantial farmer says, "I am now, more than ever, fully persuaded of the value of ashes as a manure. Nothing in the whole catalogue of manures, compares with them on my land. The soil was a thin clayey loam, and where the ashes were sown there was a crop of excellent clover where for years the land had been almost unproductive."

Grasses are more benefitted by ashes than other crops, since they require a greater amount of the salts which ashes contain. For all permanent mowing lands, especially on the lighter soils, ashes are among the cheapest of manures. In parts of Flanders and Belgium, countries in which the science of Agriculture has been carried to a higher perfection than in any other part of Europe, the great loss of vegetable matters from the soil is constantly restored by ashes or bones, together with other manures to be mentioned hereafter. Indeed almost all agriculturists, both in Europe and America, have attached very great importance to the use of ashes. In some parts of Germany they are held in so high esteem that they are transported to a distance of eighteen or twenty miles, to be used as a top dressing. According to Prof. Liebig, with every one hundred and ten pounds of leached ashes of the common beech tree, spread upon the soil, we furnish as much phosphate as five hundred and seven pounds of the richest manures could yield. Now phospates are highly useful to all kinds of soil.

There can be no doubt that the process of leaching takes from the ashes a part of their fertilizing properties. For many uses, this is no objection. Especially is this the case near the

sea, where leached ashes are thought, by some, to be even more serviceable, as the salt in the atmosphere the more readily combines with them. Every practical man has heard of the amazing effects which bone dust has upon the soil. Yet this is valuable, chiefly, for the phosphates it contains. But if we may rely upon the statement of Prof. Liebig, leached ashes also contain a large amount of phosphate of lime, which would show them to be extremely valuable. But suppose we allow four bushels of leached ashes to one bushel of crushed bones, the expense of the ashes would, in most cases, be less than the bones. But if bones can be procured, a mixture of leached ashes and bones, four bushels to one, forms the most useful application that can be made. The compound should remain a week or two before being used. Those who have tried leached ashes, have been fully satisfied of their superior qualities as a fertilizer. Careful experiments, by careful, conservative men, show that land producing one ton to the acre, has been so improved by this means, as to yield three tons to the acre. Where thirty bushels were used on three fourths of an acre, the crop was increased more than three fold. Nor are leached ashes subject to the objections which are raised by some against the use of lime. They do not apparently exhaust the soil. The effect of them is felt for several years. Many farmers have found by experience, that one bushel of unleached hard wood ashes is nearly equal to two bushels of plaster, as a top dressing for the dryer grass lands. If this be true, what has been said would show that leached ashes are about equal to plaster in their effects on such lands. A peck of lime is commonly used in leaching a bushel of ashes. This, of course, adds much to the value of leached ashes for grasses. They contain, also, a portion of the alkali which is decomposed by the action of the atmosphere, and the water in the soil prepares it for the food of plants.

As we have already spoken of the use of mud, it is proper here to say that ashes may be mixed with mud in the proportion of six or eight bushels to the cord. The mud is better, as usual, dug in the autumn, though the mixture might be made in the spring, or on application to the soil. If leached

ashes are used, the proportion may be about one to three. In this case the two substances mutually assist each other, and the compound is, perhaps, better than either alone would be. So potash added to peat mud, makes a compound equal to the best stable manure.

In these remarks no mention has been made of coal ashes as a top dressing. There is a very common impression that these are worthless. We have known of their use in but few instances with decided advantage. On clay soils they may, perhaps, be of some value, but other substances will be found more profitable. In this connection we should allude to the practice of burning sea-weed as a manure. The ashes of it are spread upon grass and pasture land. They form a very useful and powerful stimulant, but the process of burning sea-weed causes the loss of its most fertilizing qualities. The most common and efficient mode of application is to carry it directly upon the grass as a top dressing. The coarse rock-weed and kelp decay in a much shorter time than the fine sea weed, and are, perhaps, better than this. Whenever sea weed is used, it is best on sandy or gravelly soils. From twenty-five to thirty, or even forty cart loads to the acre, are sometimes applied. Peat ashes form, in some cases, a valuable top dressing for grass and pasture lands. In Holland, where every fertilizer is preserved with care, peat ashes as well as wood and coal ashes, are highly esteemed. The great value of the first is well known to many, and if those who have them will spread them upon grass at the rate of fifteen or twenty bushels on the lighter, and thirty or forty on the heavier soils, they will be abundantly repaid.

If what has been said be true, and it is the result of many experiments, some of which have come directly under our own observation, farmers would do better to buy ashes on the return of every spring, than to sell them, as is very often the case in this part of Massachusetts.

Of the use of gypsum, or plaster of Paris, the most contradictory opinions have been expressed. So far as our observation goes,—and we have both seen and tried many interesting experiments on the old soils of this State, and the newer soils

of Maine,—the application to moist soils has been fully satisfactory. It has been said that plaster does not benefit natural pastures. This is not strictly correct. In recent experiments on pasture lands, the result has been wonderful. In April of last year, a large pasture which had become worn and somewhat unproductive, received a generous top dressing of plaster, The grass started sooner and continued throughout the season to look far better than the adjoining pastures of precisely the same soil. So far as could be ascertained, the increase in grass over the adjoining pastures, was about seventy-five per cent. Nor was this all. This pasture came in the present season with the greatest luxuriance. And to this day its load of beautiful green is the wonder of the neighborhood. Its effect on clover and Timothy is even greater than on pastures. Many have supposed that plaster would exhaust the soil. This would not seem to be the case, for as it takes four hundred and thirty parts of water to decompose one part of plaster, its decomposition is slow, and consequently its influence is felt for several years. How, then, can it have such immediate and beneficial effects? It retains the fertilizing gas which is constantly rising from fermenting vegetable matter, and gives it up at a proper time for the nourishment of the plant. It does not, like lime, cause vegetable matters to decay, but rather when they decay, holds their most important parts from escaping.

The infectious odor, which rises from decaying vegetable matter, from the stable, from the manure heap, and imperceptibly from the whole surface of the earth, is far the most important element for the growth of the plant. Plaster fixes this, and the first shower washes it into the earth, to feed the roots of plants. The relative value of manure, depends upon the amount of this noxious odor, this ammonia which it contains. This gas, commonly known as hartshorn, is an exceedingly powerful stimulant. Nor will it appear unimportant, when we bear in mind that two and one quarter pounds of this ammonia, lost by fermentation, is equal to the loss of one hundred and fifty pounds of grass or grain. Scientific men will say that this gas is taken up in the atmosphere by the rain, and descends with the rain to fertilize the earth. This is very true.

This ammonia, this infectious odor, so valuable, so indispensable to the earth, is not lost forever when it flies away into the air. But does not the shrewd farmer perceive that as much of this as he allows to escape from his own lands, by neglect, falls upon, and improves the fields of his neighbor as much, and perhaps more, than his own? Is it not evident that by saving all that he can, and by receiving whatever the genial rain brings with it, he gets a double benefit?

If the effect of plaster is such as we have described, no one can fail to see how important are the functions it may be made to perform. But it also adds a certain amount of lime and sulphur to the earth. It is composed of these substances for the most part, and hence called by chemists, sulphate of lime. We shall have occasion to speak of its use in connection with other manures, when we speak of the compost heap. We now allude to its use by itself, as a top dressing.

On some soils it is not so satisfactory as on others. But our pastures are many of them covered with the white honeysuckle. These might be called clover lands. On all clover lands, whether reserved for pasture or mowing, plaster has a most wonderful influence. No other manure produces such an enormous increase of vegetable growth, in proportion to the quantity applied. Most manures require to be used in quantities far exceeding the bulk of the expected increase. Not so with gypsum. A bushel, or two bushels to the acre, have been known to double the crop, and to add more than twenty times its own weight to it. Even greater results have followed. For if we may believe one of the most distinguished French chemists,* every pound of nitrogen which we add to the grass, increases the produce one hundred and ten pounds, and this increased produce of one hundred and ten pounds is effected by the aid of a little more than four pounds of gyysum, or plaster. Another accurate investigator,† found by actual experiment that the ashes of an acre of red clover, contain no less than three bushels of plaster of Paris. This important fact proves that the earth already contains a large amount of this

* Boussingault, Ann. de Ch. et de Phys. t. 43, p. 243.

† Davy, Agricultural Chemistry.

substance, and that it is essential to the growth of clover. This may, perhaps, explain why clover so soon runs out to give place to other grasses. The requisite supply of plaster has been exhausted. In any case, the addition of plaster to clover lands, and especially to pastures, is of the highest importance.

The effect of charcoal is somewhat similar to plaster. Charcoal will absorb ninety times its own bulk of ammonia, which is held from escaping till it is separated by water and carried into the earth for the plant. When dry, the operation of fixing the gas is repeated till the next shower sends the gas into the earth, and the particles of water take its place in the charcoal. In this way, as a top dressing, charcoal as well as plaster, performs the most important functions. If we take any decaying animal matter, which has begun to give off its offensive and noxious odor, its ammonia, and cover it with charcoal or plaster of Paris, this escaping gas is immediately stopped. No infectious odor arises from it. The decay of the substance has suddenly ceased. This simple fact will show the intelligent farmer to what purposes these substances may be applied. His choice of these should depend somewhat on the expense of procuring them. The relative expense depends so much upon circumstances, that we need not make the estimate. As an absorbent and retainer of the valuable properties of manure, peat mud and loam will also be found of essential service. If used on a high and dry soil, the effect of plaster will not be very apparent the first season, unless like the present, there are frequent rains.

There is an impression among many that plaster does not produce so good results in the immediate vicinity of the sea shore. This, we think, does not arise from the proximity to the sea, but from other causes. Many of our lands do not need the application of plaster. We have seen it used, to the best advantage, within two miles of the sea. If there were any thing in the sea air to prevent plaster from performing its usual functions of fixing the rich gases, the effect would be perceived to a far greater distance inland. If any failures have occurred in its use in the vicinity of the sea, they were proba-

bly owing to the soil rather than to the atmosphere. There is one other remark in this connection. When plaster has been applied without immediate effect, we should not at once conclude that it is useless on the particular soil to which it is applied. The first season may be dry, and ill adapted to its decomposition. In such cases, good results have ordinarily followed the second year.

The great utility of bones as a manure, arises from the large amount of phosphates which they contain. On all pastures which have been long fed, the phosphate of lime is exhausted. It is constantly taken from the earth in the grass, to form the bone, the muscle, and the milk of animals.* Of the earthy matter in bones, nearly five sixths consist of phosphate of lime and magnesia. Nitrogen is also abundant, and, of course, ammonia, for this is an element of nitrogen. A few bushels of bone dust will often quite restore old worn out pastures. Indeed, almost every part, of which bones are composed, goes directly to the nourishment of vegetable life. The ashes of all grains are very rich in phosphate of lime. This shows the importance of furnishing this element for their use.

But, it may be asked, how are we to know when bone manure is required? Doubtless every farmer has observed the eagerness with which animals, and particularly milch cows, seize bones whenever they can find them. Cows require a large amount of phosphate of lime, and when their feed is destitute of it, they are compelled to seek it in the bones. And when they are seen to resort to them for it, we may be sure there is a deficiency in their pastures. Bones have been much longer and more extensively used in England than in this country. More than twenty years ago, the importation of bones into England amounted to more than forty thousand tons a year, at an expense of more than five hundred thousand dollars. Their use has been much increased since. They are

* The *bone disorder*, to which allusion has been made in a former note, has sometimes been thought to arise from something the cows eat in the pastures. If this were the case, why should not other animals, fed on the same pastures, be affected by it. If it arise from the exhaustion of phosphate, it would seem more proper to ascribe it to *something they do not eat!*

brought from all parts of the world. Agents are employed in this country to collect bones to enrich the farms of England. It is to be hoped that every farmer will save a substance which has been so long thrown away, and which would prove one of the richest manures he could use. The bones, when dry, may be crushed and pulverized with an axe. There are rainy days enough which would not be better employed. Mills are established in various parts of the country, for the purpose of grinding bones. They are sometimes ground in plaster mills. A mixture of crushed bones and ashes, or leached ashes, forms one of the most valuable top dressings. Nor will this application, in small quantities, be thought expensive, when we consider that the animal part of bones, which amounts to about one third, contains eight or ten times as much ammonia as the ordure of the cow, and that the fertilizing salts in bones are sixty-six times the amount of a like quantity of the ordure of the cow.* So that a smaller quantity of bone dust will answer the same purpose of a much larger quantity of manure from the stable. We can but hope that every farmer will try the experiment. It may be done on a small scale, at first, though in the vicinity of every butcher's establishment, bones can commonly be procured in any quantity.

Thus far we have treated of manures which belong more peculiarly on the surface, as a top dressing for grass. For though they are sometimes used, especially plaster, on ploughed land, with potatoes and other crops, yet their influence on the surface is thought to be far more effective. Indeed, the benefit of lime, plaster, and charcoal, would, in a great measure, be lost were they to be buried to any depth in the earth. But there are other manures which are often used as top dressings. Little need be said of the comparative value of animal substances. They have been artificially applied from the greatest antiquity. They are mentioned by Homer, which distinctly shows that their value was understood a thousand years before the Christian era. There is every reason to believe, moreover, from other ancient authors, that great care was exercised in preserving and applying manures to fertilize the earth. Nor

* We state this on the authority of Dr. Dana.

is there any reason to suppose that Agriculture, as an art, was not carried to as great perfection among the ancient Romans as it has been either as an art or as a science, among the moderns. For it is a curious fact that the Roman agricultural literature far exceeded the modern in extent and richness, till within the last fifteen or twenty years. And it would be easy, if this were the proper place, to trace the points of resemblance between the Romans and ourselves, not only in general modes of cultivation, but also in the details of agricultural life, and in the tools they used.

It is still a question, whether the real value of stable manure is not as great on the surface, if applied at a time when the rich gases are not lost by evaporation. It is, perhaps, better, if lands admit of ploughing without too great expense, to cover such manures with the soil. But we have already seen how this gaseous matter may be saved from loss by evaporation, by the addition of charcoal or plaster. If this loss is prevented, top dressing is by far the least expensive, when the object is simply to renovate the soil, and improve the quality and increase the quantity of grass.

In a case which we have in mind, a very poor, worn out grass lot, was top dressed with fourteen ordinary cartloads of good stable manure to the acre. The quantity of grass was increased four fold. Clover and Timothy came in as luxuriantly as on any new laid piece. If the top dressing were repeated once in five or six years, there would be no danger of exhaustion, though there would be an advantage in loosening the earth with the plough. But the use of stable manure should be confined mostly to mowing land. On closely fed pastures it would be injudicious, from its exposure to the sun. On these, ashes or plaster would be better.

It would lead us beyond the limits of our present purpose, to enter into the details of the preservation of the animal manures. But we must be permitted to make a few suggestions which have been forced upon us by some years of observation in this and in other states. It is a very common practice to suffer the manure from the barn to lie exposed for months to the winds and the rains of summer and winter. Many farmers have no

arrangement by which the liquid and most valuable part of stable manure is saved. And yet, under all these disadvantages, they are too apt to congratulate themselves on having so many loads of manure. They do not consider that it is the quality, and not the quantity, which adds richness to the soil. The practice of digging a cellar under the barn, is becoming more common among enterprising farmers, and it may be said that the increased value and quantity of the manure, is enough to pay for more than the interest of the extra expense. Protected manure is far the most valuable. But in cases where this has not and cannot well be done, much of the real value may be saved by forming the yard so that nothing may escape. Let peat mud and loam be thrown in, to absorb what would otherwise be lost. Plaster occasionally thrown into the yard is like money—I will not say in the saving's bank,—but rather put to compound interest. In Flanders, where the greatest economy is practised, the liquid of a single animal is estimated at from ten to fifteen dollars a year. This applied as a top dressing, has a surprising effect.

No one should neglect to form a compost heap. It may be so made as to form an extremely valuable article for top dressing. A quantity of meadow mud should be dug out in the autumn for this especial purpose. That this is indispensable, will be seen from the fact that two cords of peat mud, added to one cord of good stable manure, will make a compound of three cords, as valuable as clear barn manure. This has been tried repeatedly, and is constantly done by those who are ambitious to excel in farming. To this compost heap should be added, from time to time, all the animal and vegetable matter adapted to ferment and enrich the soil. Woolen rags, the remains of fish, the blood and flesh of animals, the hair of animals, all these make an exceedingly rich manure. A most intelligent gentleman connected with a wool factory, informs us that a cord of matter collected at the establishment, is worth at least five or six cords of the best stable manure, for a top dressing. This we cannot doubt, for here are the blood, the wool, pieces of the skin of the animal, a little lime, and many other substances, all collected together. A fermentation takes place, by

which the richest gases are formed. Such a compost heap, with an addition of loam and mud, would be invaluable for a top dressing. But though in most cases all these substances cannot be procured, many of them can, and should be saved by every one who is desirous of improving his land. Those who are near the sea, or near the market, can procure an abundance of fish to add to the compost. Nothing is better for soils than this. A little lime added to the heap, causes its rapid and thorough decomposition. Ashes should also be added. When additions of manure are made, they should be covered with mud or loam, to prevent waste.

We need not enter more minutely into the details of forming the compost heap. It is sufficient to say, in a word, that every thing capable of fermentation, should be added to it. The lower layer should be of loam or mud. Nothing is more common among farmers, on the death of a horse or any other animal, than to throw the body away. It is estimated by some, that the body of a single horse, when divided and mixed with peat mud and loam, will make a compost worth fifteen or twenty cords of the best and richest manure. This is, perhaps, too high an estimate, but animal substances ferment rapidly, or rather they may be said to putrefy without fermenting, so quick is their decomposition. If leaves, grasses, moss, straw and other substances of like nature, are used, lime will be indispenable, in causing their rapid decay. When these are well fermented, the heap should be thrown over, and if made long and narrow, so as to expose the greater surface to the air, it will be better. Whenever such a compost has been used as a top dressing, it has produced the most astonishing effects. Many experiments have shown that this is the best way of using such a compost heap. In the fertile county of Hertford, in England, it is seldom used in any other way. It cannot be too highly recommended.

Animals fed on rich food make far the most valuable manure. This will serve to show why the manure from the sty is so fertilizing. Swine are fed on a great variety of rich food. The actual profit of raising them, arises mainly from the amount of substances they will mix together and make into good manure.

Let the sty be supplied, at intervals, with mud, loam, and other vegetable matter, and farmers will not complain of the cost of these animals.

Liquid manures are highly useful to grasses. Care should be taken to apply them, also, to the compost heap. The richness of manure from the sty, is owing mostly to the great quantity of liquid matter. Hence the importance of adding a great variety of vegetable substances, loam, and mud. In a word, it may be said that all liquid manures contain a large amount of nitrogen, which is one principal ingredient of ammonia, to which we have alluded. The importance of saving the liquid of the stables, either with the compost, or to be applied by itself, may be seen, also, in the fact that the exceeding richness of guano, and the ordure of all fowls and birds, is due to the union of the liquids and solids. Spent ley from the soap boiler, is also a powerful liquid application. It shows its good effects for years, when properly applied.

After fermentation has taken place in animal manures, in the compost or elsewhere, they may be spread without much loss by evaporation, and hence it matters not whether the top dressing is applied in the autumn or in the spring. Plaster is better spread in the spring, when the moisture of the earth makes it immediately available. Not so with other manures. Some prefer the autumn for spreading these, while others prefer the spring, just before the thick grass surrounds and protects them from the sun and wind. The soil, in autumn, is not injured by the loaded cart, as is apt to be the case in spring. Others still, apply them after the first mowing, and before the summer rains. The new crop preserves the manure from drying up and wasting. This, however, is ordinarily too busy a season to attend to it with convenience.

There is no objection, as many have supposed, to feeding off mowing lands in the autumn. In spring the ground is injured, and the roots started from the soil too easily. Not so in the autumn, when the soil is dry and firm. The grass is benefited, rather than injured by it. On pasture lands in which the grass is run out, seed may be sown just before the top dressing. Thus the old roots will be assisted, while new ones will come in to improve and increase the food for cattle.

We have spoken of some of the top dressings which will prove beneficial to pasture and mowing lands. We have not aimed to treat of them in any abstruse and scientific manner. Nor have we been anxious to mention and dwell upon every possible substance which would serve a good purpose as a top dressing. It was our aim to set forth the peculiar advantages of such as could be available to most farmers of enterprise. In the choice of these, regard should be had to the soil, to the season, and to the expense compared with the probable result.

The great secret of success in farming, is to do things well and cheaply. We do not believe that in our country, except, perhaps, in the immediate vicinity of the market, a very great outlay, what is commonly called high farming, for the sake of increased crops, is expedient. Many a rich man has ruined himself by farming for display. But every one knows that our work should be done with system, with care, with vigilance against waste. Manure high, make, if possible, rich gardens of every field, but let the manure be made, so far as it can be, from the natural resources which every farm possesses. Draw from the meadow, the ditch, the roadside, the woods, whatever will enrich the soil. Nor does cheap farming, imply that the buildings, the fences, the roads about the farm, be neglected. Ditching, draining, reclaiming useless lands, these form a sort of reserved fund for the farmer.

And when these, his appropriate tasks are completed, then all the powers of nature help him rise to competence, to honor, and to happiness. Then, what a life is his! What quiet without envy! What freedom from intrigue! What calmness! What serenity! His sleep is sweet. When morning comes, the very animals hasten with glad step to welcome his approach. These joys are for him to appreciate, who aims to secure that higher culture to which every task of life is subservient!

# ESSAY

## ON REARING TURKEYS.

BY ALLEN W. DODGE.

The increased attention excited these few years past in the poultry yard, the pains that have been taken to procure new and valuable breeds of fowls, and the high prices which choice specimens of some varieties have recently commanded, prove quite conclusively that the rearing of poultry is to occupy a higher rank, than it has heretofore done, in our stock husbandry. Poultry may, indeed, be considered as holding a similar relation to the other stock of the farm, that the smaller and rarer fruits hold to the staple products of the orchard. But a short time ago little or no attention was paid to the cultivation of plums, cherries, strawberries, and other garden fruits. The winter eating, and the cider apple, was all that the farmer thought worthy of his care, in the way of fruit culture. But with the increase of population, in our cities and large towns, a demand has been created for these choicer fruits. The cultivation of them has been extended, and in the raising of such fruits as cannot be brought from a distance without damaging, if not wholly spoiling, the farmer, not less than the suburban gardener, will find an increasing profit.

So too, the markets, with the growth of our cities, demand larger supplies of poultry; and poultry, especially early chickens, cannot well bear a long transportation without injury. Hence, there is less competition from abroad in the sale of them. They command, and, for some years past, have commanded a good price, such as is more remunerative than that paid for the beef and pork raised here. Now the business of poultry raising may be overdone,—the market glutted and the producers out of pocket. But this is not yet the case. On the contrary, the demand for eggs and poultry, as for other delicacies of the table, is increasing, as the natural effect of the

growth of wealth and population among us. If these statements are correct, it follows that poultry may be made a more extensive and profitable part of the animal products of our farms, than they have heretofore been.

The fowl mania now so prevalent, may to some have the appearance more of fancy than utility; but there will be this benefit growing out of it, that new and valuable breeds of poultry will be introduced and disseminated. The mania will abate after passing its crisis, if it has not already passed it, while the effects of the excitement will be for the general good. The efforts of those who have evinced so much laudable enthusiasm in this direction, seem to have been confined principally to the procuring and propagating of pure specimens of the different breeds. Their form, color, and other distinctive properties, have been duly ascertained and promulgated; but the general management of fowls and their habits, the rearing and fattening of them, with other important particulars tending to make them profitable, have not, as it seems to me, received their proportionate share of attention. The great question with a New England farmer—I mean a practical and not a fancy farmer—as to the raising of any animal or crop is,—will it pay? If he is satisfied that it will, he may be induced to enter upon it, though the fixed habits of most of our farmers make them averse to deviate from the beaten and safe path, into new practices however promising. Still, the all powerful influence of a new and successful example, often compels imitation. Thus may be witnessed in particular neighborhoods, particular courses of husbandry, that have been started by some enterprising cultivator, who, perhaps, was considered at first as rash and inconsiderate as was Jared Elliot, when, more than a century ago, he began to reclaim a shaking meadow of forty acres in Guilford woods, Connecticut. "The meadow," he says in his Essays on Field Husbandry in New England, "was deemed so poor that none would take it up. I was pitied as being about to waste a great deal of money, but they comforted themselves that if I spent it unprofitably, others that stood in need of it, would get it." And he adds, with an honest pride in the result of his efforts, "they are of another opinion now."

But it is not my object to give directions as to farm management in general, but to offer some hints, derived principally from experience, on the rearing of turkeys in particular. The first grand requisite is, to have good stock to raise from, both male and female. The cock turkey should be of a large size, and as he does not attain to his full growth till he is two or three years old, one of this age is to be preferred, though yearlings are generally made to answer. The color I should choose, would be jet black or bronze, with legs to match. The books give directions as to the gait and mien deemed essential to his perfection; but there is little difficulty in finding a gobler, whose strut is sufficiently martial to satisfy the most precise stickler for a military carriage. With tail erect, breast inflated, and head and throat inflamed, he marches, a perfect Hayneau of the poultry-yard. The question is discussed, too, in the books, as to the number of females that should constitute his harem. But it is for us more of a theoretical than practical one, as there are here hardly ever more hens allowed to this feathered sultan, than can be suitably provided for by him. A greater point is to prevent a deterioration of stock by breeding in and in. The excellent rule given by Mrs. Sarah Dakin, of Duchess County, N. Y., in a statement on the management of poultry, "Be sure and change the tom turkey every year," is confirmed by the practice of the most successful turkey rearers. A strong and healthy brood of chicks is thus secured.

With the same view, the largest hen turkeys—and if they are more than a year old the better—should be reserved for mothers. Those that are small in size will lay only small eggs, from which the chicks hatched will be of corresponding proportions. If you expect a large litter of eggs, the hens must be well kept through the winter, but not so as to become very fat, otherwise they will not lay so early as is desirable. If they do not begin to lay till May, they will not complete their litter and be ready to sit till June, which will bring the hatch into July; and thus will be allowed for the growth of the young brood only five months to the last of November, at which period the annual turkey killing comes round in New

England, as regularly as Thanksgiving. It is considered, therefore, by all experienced persons, of great moment to have an early litter of eggs, the first turkey's egg being often a matter of as much congratulation in the family, as the first baby's tooth.

The turkey is an out-of-door bird. In this respect he retains even in his domesticated state, that love of freedom which characterizes the aborigines of our country. Turkeys have no fondness for a shed or barn, as a roosting place, but in the coldest weather in winter, in the severest storms of snow, sleet or rain, they prefer the open air and a lofty tree on which to take up lodgings for the night. Here, perched head to the wind, they ride out the hardest gales in safety and with apparent pleasure. The instances are rare in which they are known to perish, either from the cold or storm. Dickson, an English writer, says that "it is important, during winter, that their perches should not be exposed to the sweep of frosty winds, which are apt to cause the feet of turkeys to freeze," and the same caution is given by Dr. Bennett, in his work on poultry. But such a misfortune I have never known to befall turkeys, that all winter have risked themselves out on trees over night. When the old hens shed their feathers late in the fall, as will be the case when they have continued to lay a number of litters, it is well to house them in cold nights till they renew their coat, and it may be prudent to do so in extremely severe weather in winter.

We will suppose now that winter is gone, and spring is beginning to open. The notes of the robin are heard welcoming the advent of warmer skies. As the snow melts away, patches of green earth are here and there disclosed to view. Your turkeys no longer hang about the barn, like so many loafers, but spend most of their time in the orchard, and on the sunny side of walls and buildings. The gentleman of the party is as full of airs as any city exquisite, perambulating hither and thither, in front and at the side of his companions, more intent on exciting admiration of his own person, than bestowing it upon theirs. This species of courtship continues throughout the spring, even after the hens have laid out their litters

and have begun to sit. His attentions to them during this latter period often become so officious and annoying, that it is best to separate him entirely from them. The hen turkey is very shy in selecting her nest, and is sometimes so particular as to be a number of days in securing a place to her fancy. In this she is probably governed by an instinct, to provide a safe place for her eggs and her young. The first intimation, after mating, of her disposition to lay, is by her stealing away from her companions, going here and there with head down, as if meditating upon the task before her. If closely watched, she will be most likely to give up the project for the present. Even after she has begun to lay, she must be followed only at a distance. A better way to find the nest, if out of doors, is to observe the direction in which she returns from it. This very season, one of my turkeys that was laying a second litter in a neighboring thicket, was watched a number of hours on two successive mornings, and yet she gained her nest the first morning in secresy; and on the second, as if fully apprehending the system of espionage established over her motions, she wandered around and through the thicket, and at length returned home and dropt her egg on the open grass plat in front of the house.

If left to her own choice, the turkey will usually make her nest out of doors, at the side of walls, under a bush, in long grass, or in a thicket. Although so fastidious in the site of her nest, she is not at all particular as to the materials of which it is composed, and is as well contented with the bare ground as with a bed of leaves. After a place is selected, it is not always the first day or the second, that it is made the depository of the first egg. She seems intent rather on adapting herself to it, and endeavoring, like the boy in the new school house, "to get the hang of it." The number of eggs which a turkey will lay in the spring, varies from fifteen to twenty-five. They should be gathered daily—no nest egg is necessary—or as often as they are laid, and carefully kept in a cool place. If left out over night, they may be chilled or stolen. But to guard against such accidents, nature teaches the turkey—silly bird as we sometimes call her—just what to do, by covering

them carefully with a few leaves or spears of dead grass. To be sure she does this in warm weather as well as cold, but the covering serves equally in both to screen them from observation.

When she has laid her litter, the turkey manifests her desire to sit by remaining on her nest, even if no nest egg be under her. She should be permitted to do this for some days before the eggs are placed under her, observing however to drive her off at night if the nest be out of doors. When this is the case, it will not be safe to let her sit there, as the eggs and herself will be exposed to rats, weasels, skunks and other midnight marauders. A nest should therefore be prepared for her under cover. The barn is a good place for this purpose, and the scaffold or a mow of hay more suitable than the ground floor. Better still is a shed or an out-house, which can be kept fastened, as the liability to accidents is thus diminished to almost none at all. For a series of years I have kept my hen turkeys in a workshop, during the process of incubation. On one side of this is a carpenter's bench, the space under which is parted off with boards, making a number of apartments about three feet square for the nests, the hay of which they are composed being kept in its place by a narrow strip of board laid on the floor in front. The nest should be rather shallow, and spread out over sufficient space for all the eggs to rest on the surface.

The number of eggs that can be covered to advantage by a turkey, depends upon her size; twenty is a large number, and better success may be expected with fifteen or seventeen. Having placed them in the nest, allow the hen turkey to remain on her original nest, if out of doors, till dusk, and then carefully take her in your arms and remove her to her new abode. Sometimes she will be frightened and disposed to escape. To prevent her leaving, I secure a piece of lattice, made of laths, in front of the nest under the bench, immediately on placing her there. Similar screens I have attached to all the nests, thus keeping the inmates as securely shut up, as if they were in so many cages. This arrangement demands more care of the turkeys than when they have their liberty, as they must be let off every day or two to eat and drink, and for health and

cleanliness. The way once learned into the building, there is no trouble in their returning to it afterwards. The turkey is a close sitter, so close that I have almost uniformly been obliged, on removing the lattice, to use some effort to drive her off. She quits reluctantly; when off, she feeds, she drinks eagerly; she runs about quickly, pecking the green grass, and if she can find any loose dry dirt, she settles herself in it, flopping the dirt rapidly with her wings over her body, and then hastens back to her nest. This adhesiveness to her eggs grows stronger as the time of hatching approaches. She should then be disturbed but seldom. Four weeks is the usual term of her incubation, but it is sometimes protracted a day or two longer. It happens not unfrequently that turkeys, like some hens of the common fowls, do not incline to sit. When this is the case, they continue to lay litter after litter during the season, as do often the turkeys that have hatched, after their broods have attained to some size. The eggs may be used in the family. It is not advisable to have a hatch from a late litter of eggs; the chicks will not repay the cost and trouble of attempting to rear them. Turkey eggs may be placed under common hens, and hatched with success, if no more are used for this purpose than can be fully covered. This is a convenient arrangement in the spring, in order to enlarge other broods.

As soon as the chicks break the shell, it may be known by a peculiarly soft and tremulous sound uttered by the mother, as if recognizing the new-born brood, and expressing the anxious sensations that now throb in her bosom. I know of no sound more touching and plaintive—a sound which she never makes till this epoch in her existence. As they are hatched, it is well to remove the young chicks to the house, and to clear the nest of shells. But the chicks should be returned to the mother at night, or before; the natural warmth of her body being of more help to them than any artificial substitute. Sometimes a chick, in consequence of the pellicle which lines the interior of the shell adhering to it, is unable to free itself. Gentle means may be used to separate them, but care is necessary in the operation, or it may prove disastrous. A turkey will almost always hatch out the larger proportion of the eggs on which she has sat, and

not unfrequently the whole of them. I have known instances, when, on removing the old one for the first time after hatching, the entire brood presented themselves, as lively as the four and twenty blackbirds in the nursery song, when the crust of that famous pie in which they were baked, is opened to the wonder and admiration of all juvenile naturalists.

Now that the chicks have fairly entered on life, what is to be done with them? Leave them to the care of the mother—nature, you say, is the best guardian and provider. True, were the mother in the woods, wild and undomesticated. But she is under your protection, and in your hands is the destiny of her offspring. You must do something for them—at least after they are a day or two old—or they will perish from starvation. In doing this, however, avoid the too frequent and mischievous practice of stuffing and overloading them with food. They are but tiny birds, with constitutions as delicate as can well be imagined. Shun, too, the absurd treatment of thrusting a pepper corn down their throats, to invigorate them. But begin betimes to supply them with crumbs—not soaked in wine, as the English writers recommend—but softened in water. The same food of which the parent turkey eats, except grain in an unbroken state, the chicks will eat. The article most in use for this purpose, is Indian meal made into a paste, and this given to them in small allowances, will be sufficient for their present wants. They should for a week or more be kept under cover, and then they may be placed out of doors, in some enclosure, to prevent the old one from rambling. A frequent practice is to tie her to a stake, by a string attached to her leg. But with such a confinement she is not well pleased; and in one instance I have known a sad fate befall a turkey thus tied, being torn in pieces by a strange dog that attacked her. If it be desirable to confine the mother, it may be done by placing a crockery crate over her, at the sides of which the little ones could have easy passage in and out.

At night, and in wet weather, turkey chicks must be safely housed, and the house must be large enough to be well ventilated, and high enough at the door to drive in the old one without trouble. I should recommend invariably a floor of boards,

with the edges and those of the sides closely united, so as to keep out all intruders. For want of such a precaution, I lost in one night last spring the entire brood of a common hen, consisting of fourteen very early chickens—a rat or a weasel, well skilled in the art of mining, had burrowed under the sides of their house and made a clean sweep of them. The floor of the turkey house may be covered with fine hay, which should be frequently renewed for purposes of cleanliness. The cleaner the young chicks are kept, the less liable are they to be infested with lice. I know of no remedy for this evil—fat or oil rubbed on the chicks, is said to be effectual—considering in this, as in most of the disorders to which poultry are subject, an ounce of prevention worth a pound of cure.

As the chicks grow, they will need larger supplies of food. Curd and thick skim milk are good articles of diet. But here let me caution against giving any salt with the food of young turkeys. A farmer in my neighborhood lost his whole flock of forty or more, merely by feeding them once on skim milk, which had been salted. So far as I have observed, salt may be safely left before turkeys and other fowls, when they have attained to some size, as it is to be found on barn floors all winter, where the hay has been salted. But it would seem from the above fact, that the crops of young turkeys are not adapted to its use. The books mention certain other articles as injurious to them—marrowfat peas in particular—but I have never known any ill effects to turkeys from this description of pea, nor can I see why it should be poisonous to them more than the other varieties. For drink, let them be supplied with water, placed in shallow vessels.

After a few weeks, the young brood may be allowed to accompany the mother in her rambles, with full liberty to go where she pleases, giving her the range of a pasture if practicable. They will soon learn to forage for insects, which promote their health and thriftiness. Dry summers make large turkeys; the weather is almost uniformly favorable to their rambling, and grasshoppers are plenty. But in wet seasons they thrive less rapidly; they find fewer insects, and lose many days in remaining idle. A flock of turkeys, in foraging

for food, spread themselves at some distance apart, and thus advance, devouring in their course every insect on which they can fasten their bills. As accidents of various kinds may befall the young chicks, it is well when two broods are hatched at about the same time, to join them together, and to house them with their mothers in the same coop at night. The old ones will shortly associate together, taking equal care of the members of the families thus united, and forming a double protection in times of danger. And if it be necessary to hunt them up at evening, you will thus save many steps by making but one journey for both flocks. If, however, they be fed regularly at night, they will soon learn to come home of themselves.

At six weeks or two months old, the young turkeys begin to "shoot the red," as it is called, by which is simply meant that the red granular excrescence on the head and neck, begins to develope itself. This is a critical period in their existence. If there be much wet weather, they will drop off in considerable numbers. It may safely be asserted, that from loss at this time and before, not more than two thirds of the chicks that are hatched, survive. But when they have shot the red, turkeys are thenceforward the hardiest of all poultry. They have literally passed their climacteric, and food, food, and a plenty of it, is now nearly all that they require. This they will obtain, till it is time to fatten them, principally in the fields; and of course unless there is a sufficient range for them, they cannot be reared to advantage. They may soon be made to roost on a tree, provided with boards for them to go up into it. It is safer, however, for them to make their first efforts at roosting in a shed or barn, as they sometimes loose their hold of the roost, before they have become accustomed to it, and if out of doors may be picked up by some of those midnight prowlers that infest farm premises. After they have become accustomed to the tree on which they roost, they will generally repair to it every evening, seldom manifesting any desire for a change.

They now range farther and farther, sometimes so as to be mischievous to the grain fields and orchards of neighbors. To check this rambling propensity, the old one may be fettered by fastening her legs together with a piece of list a few inches in

length, so as to allow her just to hobble. The fetter can be removed in a few days, when the habit of strolling in the wrong direction is cured. But ramble they must, if they are to get their living by foraging in the pastures. If you have a bed of cabbages, be sure to protect them from your turkeys, or you will have only the stumps left for yourself. Early in the fall they should be fed night and morning with dry corn. When the weather becomes colder, they may be supplied at frequent intervals with a mash of boiled potatoes, Indian meal and skim milk, given to them warm. Of this they will eat most voraciously. They now ramble but little, preferring rather to hang about the sunny side of buildings and walls, from which they will hasten when called to their food, and having devoured it, repair thither again. Thus plentifully fed, they thrive most rapidly, increasing in size, in the short space of a six month, from the wee chick that was hatched in the spring, to the plump and tempting roaster, if a male, of twelve and fifteen pounds weight, and if a female, eight and ten pounds, at Thanksgiving.

Now it may fairly be asked, will the price at which turkeys usually sell in the market at that time, pay a profit for the rearing of them? It is difficult to tell the precise quantity of food consumed by a turkey from first to last, so as to estimate the cost of it. But when they bring fifteen cents a pound, I believe those that raise them are generally satisfied of the profits, taking corn at an average price. At any rate, I have been, from an experience of the past ten years; having during that time reared about fifty turkeys a year, and in one year eighty six young turkeys from six old ones. In the rearing of turkeys care and attention are all important. Ill luck will sometimes happen—but here, as in most other pursuits, ill luck is often only another name for a want of attention. It is a pleasant work to have the care of turkeys. They are company for you at all times; first to salute you with their jovial gobbling in the morning, and ready at any moment to run to you at your call. And the interest we take in them is all the greater, from the care and solicitude with which we have watched over them.

# ESSAY

## ON FARM ACCOUNTS—FARM DIARIES,

## AND AGRICULTURAL REGISTERS.

BY BEN PERLEY POORE.

Agriculture has at length become fashionable! Octogenarians who have acquired fortunes in the cities, return to the homesteads which they despised in early life; and resolute young men, finding little hope of success in the professions or in commerce, look—as did their ancestors—to the ample bosom of nature for their support. Politicians, who generally contrive to own at least a garden, are ever ready to descant upon the dignity of agricultural labor; while scientific book-worms cultivate potatoes, in order to experiment upon the practicability of increasing their growth by electric currents, or to try the virtues of magnetic hoes, in drawing out the rot.

Our Commonwealth cannot boast of many private collections of paintings or of statuary—a very insignificant fraction of her sons keep race horses or pleasure yachts—and even the "pomp and circumstance" of militia honor has sadly dwindled into disrepute. But in the environs of every city, near each busy manufacturing village, and in many a secluded spot, trim fences enclose "fancy farms," and buildings of quaint yet often fair proportions, proclaim the wealth, eccentricity, or exotic taste of the amateur husbandman. Many of these gentlemen, by the judicious employment of their capital, and by importing choice stock, confer benefits, (directly or indirectly,) upon the neighboring farmers—while others, who madly rush into every new theory, practically illustrate the folly of "sowing Spanish dollars, and reaping four-pence-ha'pennies."

Then we have the great body of Massachusetts yeomanry—so graphically described by Quincy as "men, who stand upon the soil and are identified with it; for there rest their own hopes and the hopes of their children. Men, who have, for

the most part, great farms and small pecuniary resources;—men, who are esteemed more for their land, than for their money;—more for their good sense than for their land;—and more for their virtue than for either. Men, who are the chief strength, support, and column of our political society, and who stand to the other orders of the State, in the same relation which the shaft bears to the pillar—in respect of whom, all other arts, trades and professions are but ornamental work—the cornice, the frieze, and the corinthian capital." Whatever tends to stimulate and direct their industry, spreads prosperity over their fields, or carries happiness to their homes, merits careful consideration, for it strengthens the foundations of our public renown.

Generally speaking, we find few farmers, either practical or fancy, who have a proper conception of their occupation. The mysteries of husbandry are considered but as the lesson of a day—and every man, the moment he becomes the occupant of a farm, is allowed to style himself a competent farmer. "Is there nothing in Agriculture," said Columella the Roman, "which requires to be studied? Is there nothing to reward research? For myself, when I take an enlarged view of this noblest of all pursuits, and survey it on all sides—and consider what it embraces that it would be profitable to know, I fear I shall see the end of my days before I shall become a thorough master of all its mysteries."

As it was in Rome, so it is in Massachusetts. We have our public men, who, like Cincinnatus, Denatus and Regulus, retreat from the cares and toils of state to the pure and unalloyed joys of agriculture and horticulture. Our poets and our historians, like Virgil, will leave behind them many a token of their devotion to rural pursuits. And our Legislators, by repeated grants of money, have shown their appreciation of Washington's declaration; that "in no way can more real and important services be rendered to a country, than by improving its agriculture." All this flatters the amateur farmer, and encourages the hard-working yeoman—it elevates the common calling of each in the social scale—but it does not make either "a thorough master of all its mysteries."

And what is the lot of a young man who has come from the city to be a farmer, and has invested his capital in land, stock, and tools? He has heard cattle-show orators eloquently descant upon the independence of his new pursuit, and implicitly believes Franklin's assertion—that "the farmer has no need of popular favor—nor of the favor of the great—the success of his crops depending only upon the blessing of God upon his honest industry." But he soon finds that industry must be well directed in order to be profitable, and he is often at a loss to know how and when to labor. Agricultural works and periodicals are generally so interlarded with individual speculations, that he turns from them in despair. Even the Reports of Agricultural Societies, which embody so much valuable information, only detail individual cases. They chronicle the management of the best farms in favorable seasons—the product and growth of superior beasts—the fruit produced by extra attention—and the mammoth varieties of the garden. The art of Husbandry may be gleaned from many a library, but the student-farmer may commit to memory scores of works on agriculture, and yet, like the Roman, "see the end of his days before he becomes a thorough master of all its mysteries."

These mysteries are not, after all, MYSTERIOUS. The young farmer who expects to enrich his land by some magical process, will be as much disappointed in his expectations as he is ignorant of the process of improvement. A mere theory, even if clearly defined, is idle and useless if unattended with practical observations; and the more practical information a young farmer can acquire, the deeper versed he becomes in the mysteries of his profession—those magical secrets, which enable his more experienced neighbors to bring home money from market. The lawyer finds the mysteries of his profession in almost innumerable volumes of Digests and Reports—the mariner is guided by the science of previous navigators, as laid down in books and on charts—the soldier learns how to manœuvre large bodies of men by reading accounts of successful campaigns—the statesman gleans wisdom from volumes of debates—and the editor seeks the mysteries of catering for the public taste, in old files of popular journals. But where can

the young farmer go for dates and details? He may pick up an old Almanac, containing a few memoranda of the domestic life of the writer's cows, and the time his goose commenced her incubation. And some meagre details, thus preserved, convince him that a Diary, kept by any practical farmer in his vicinity, would be a more valuable text book than Loudon's gigantic Encyclopedia.

Washington, (as we are informed by Dr. Sparks,) kept a Diary after he had exchanged his victorious sword for a pruning-hook, and noted each day's work with minute care. Subsequently, when called to the Presidential chair, we are told that, "He left with his chief manager at Mount Vernon, full and minute directions in writing, and exacted from him a weekly report, in which were registered the transactions of each day on all the farms, such as the number of laborers employed, their health or sickness, the kind and quantity of work executed, the progress in planting, sowing, or harvesting the fields, the appearance of the crops at various stages of their growth, the effects of the weather on them, and the condition of the horses, cattle, and other live stock."

Many other distinguished citizens of our Republic have since followed the example left by the "Farmer of Mount Vernon," and have testified to its benefits. Their recorded praises would occupy pages, and we will simply copy the opinions of one, who, by his moral worth, his purity of character, and his fidelity to the public interests, secured a place in the hearts of his constituents and friends—the lamented Daniel P. King. In a statement made by him to this Society, (see Transactions for 1845,) on the management and products of his farm, he says, "I have long kept a sort of diary in which I have noted the employments of each day, the time of planting, hoeing and harvesting, the amount of crops, the cost of animals, current receipts and expenditures, &c. The advantages of keeping a journal, to a farmer, are many. By turning to the pages of past years, he will be reminded of work which should be done in its season; he will see where he has erred, and profit from his experience; he will know where his money, sometimes difficult to account for, goes."

A striking proof of the practical value of farmer's Diaries, has recently been witnessed in the upper part of this county, where a large farm was worked for several years by foreign laborers, directed by a mere lad, who was placed in charge by the proprietor during his absence. The boy had no experience, and his judgment was of course limited, but he found counsel and guidance in the Diaries which had been accurately kept on the same farm for nearly twenty years preceding. Selecting the records of what had been done in years of similar temperature, he not only managed the work creditably, but left none of the minor details undone. [A specimen of the Diaries referred to above, is annexed to this Essay.]

Would it not be beneficial to agriculture, if the Societies instituted for its advancement, gave a certain sum for every well kept diary of a farm situated within their respective localities, with premiums for those which displayod the most industry and ability on their pages? By requiring them to be written on paper of a uniform size, several volumes might be annually added to the library of the Society, and from them might be compiled and condensed an Agricultural History of each year. Valuable, to the young farmer at home, as well as to the scientific agriculturist abroad, would be such a chronicle, and why cannot the Society in Essex county take the lead in this, as it has in other valuable movements?

Farm Accounts are of equal importance to individuals, although they are not of the same public value as diaries, unless when questions come up relative to the comparative profit of different soils, or of different applications of the same soil. "There is not a single step," says Mr. Young, in the twenty-eighth volume of his Annals of Agriculture, "in the life of a farmer, that does not prove the advantage of his keeping regular accounts—and yet there is not one in a thousand that keeps any. This is one, among the many instances, which in the enlightened situation of the practisers of the art, is the evident reason for the backwardness in which the art is found, by any man who searches for the principles deducted from a practice, which ought to give it the regularity of a cultivated science."

A few rough memoranda or figures, to yield a gross account

of the general receipts or payments, usually constitute the entire financial record of our farmers, even those who amass large sums of money. In every other pursuit in life, the advantages of clear accounts are so obvious, that book keeping, by the Italian mode of double entry, is an essential branch of public education. Business men, who are not regular in their accounts, are always rated as unsafe customers by the prudent portion of merchants—nor is there a greater reproach to a commercial house, short of insolvency. But agriculture seems destined to be, in all its details, an exception to every thing else. Men engage in it without previous education, or study, or even inquiry;—and they conduct large business in it without those accounts known to be necessary in every other pursuit.

Would it not be of great utility to every farmer, to have before him a correct statement of his stock, farm, crops and implements, taken at the close of the preceding year? From such certain documents, he would be able to proceed on his business in a more regular and methodical way, and consequently, with greater assurance of success, than if every thing, (as is too frequently the case,) were left to custom, chance, or the exertion of the moment.

In addition to this annual valuation, every farmer should keep a Cash Book, and a specimen is annexed to this Essay of a form which has been found simple and correct. Separate accounts may be opened under the heads of Garden, Potato Crop, Woodland, Dairy, Poultry—in short the relative expense, income, and profit of every branch of Agriculture may be accurately ascertained. Amateur farmers, particularly those who carry into the country the methodical habits of the counting-house, will find in foreign works, rules for making regular and multiplied entries of every transaction on a farm. The most esteemed of these works are: "Munroe's Guide to Farm Book-keeping," Edinburgh, 1825; "Trotter's Farm Book-keeping," Edinburgh, 1831; "Harding's Farmer's Account Book," London, 1846; "Barry on Farm Accounts," London, 1849.

To keep a Diary and Farm Accounts, a farmer must occupy some of his time, but, in so doing, he will improve his mind, which demands the same constant cultivation as his

land. "Experience," says Loudon, "shows that men situated like small farmers, (who are their own masters,) are very apt to contaact habits of irregularity, procrastination and indolence. They persuade themselves that a thing may as well be done to-morrow as to-day, and the result is, that the thing is not done till it is too late, and then hastily and imperfectly. Now nothing can be conceived better adapted to check this disposition, than a determination to keep regular accounts, and a diary. The very consciousness that a man has to make entries in his books of every thing that he does, keeps his attention alive to what he is to do; and the act of making those entries, is the best possible training to produce active and pains-taking habits." Should a society offer premiums for the best-kept Diaries, it would be well to make a class of those kept by boys and girls under fifteen years of age. The youth reared on the farms of New England, cannot have more profitable evening employment, as it not only tasks their mental capabilities, but fosters an attachment to their parental acres, and demonstrates the profit of well directed agricultural labor.

To the student of political economy, or of history, as well as of agriculture, a volume of Diaries kept at the same time, in different sections of a county, could not be destitute of value the next year—in a century it would be invaluable, for agricultural information is always read with interest. What farmer has not wished for more precise accounts of Noah's vineyards, and of Solomon's orchards, which "bore all kinds of fruit,"—of the cattle of Uzziah, who "loved husbandry," and of the operations of Elisha, who was found "ploughing with twelve yoke of oxen." We read in the Journal of the Pilgrims, among the interesting events which occurred in March, 1620, that; "Monday and Tuesday proved fayre days, so we digged our grounds, and sowed our garden seeds,"—a matter of no marvellous importance in itself, but worthy of remembrance as the commencement of those beautiful gardens which now adorn New England.

Let us then have in the library of every Agricultural Society, (in manuscript, if not in print,) Agricultural Registers, compiled from the daily notings of practical farmers. They

will not only systematize and benefit the agriculture of the present day, but they will constitute a valuable inheritance for those, who may hereafter be placed upon the soil we occupy, "to dress it and to keep it."

---

## SPECIMEN PAGE OF A FARM DIARY.

[Each operative on the Farm is distinguished by a number, in Roman characters.]

DIARY FOR THE WEEK COMMENCING MAY 10.

| *Weather.* | I. | II. | III. | IV. | V. | VI. | *Stock.* |
|---|---|---|---|---|---|---|---|
| SUNDAY, May 10. Blustering. | At church. " " | | | | | | brindle cow calved. |
| MONDAY, May 11. Pleasant. | Hauling manure to corn field. | Loading cart in yard. | Spreading manure. | In garden, digging beds. | In garden, digging beds. | At mill. In garden. | Grey mare shod all round. |
| TUESDAY, May 12. Pleasant. | Ploughing in manure on corn field. | Harrowing in corn field. | Driving plough team | Mending wall. | In garden, sowed beets and carrots. | Driving team for harrow. | |
| WEDNESD'Y, May 13. Fair, but windy. | Furro'ed corn field, 5 rows to the rod, hills 2 feet apart. | Hauling manure to corn field. | Driving plough team. | Dropping manure in the hills, corn field. | Dropping manure in the hills, corn field. | Driving team. | bought eight sheep. |
| THURSDAY. May 14. Cool and blustering. | At market. | Planting corn. | Planting corn. | In garden, sowed late peas. | Planting corn. | Putting lime and charcoal round trees in back orchard | Cow crop-ear calved. |
| FRIDAY, May 15, Stormy. | Making up accounts. | clearing out hog-house. | Chopping wood. | Chopping wood. | Clearing out potato cellars | Shelling corn. | Sold black colt. |
| SATURDAY, May 16. Fair, and pleasant. | Trimming rose bushes, &c., in garden. | Hauling manure to garden. | Clearing up garden and spreading manure. | Mending wall. | Unwell, at town. | At mill. at blacksmith | Had old oxen shod. |

## SPECIMEN PAGE OF CASH ACCOUNT.

| CASH RECEIVED. | | | | | | CASH PAID. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Date.* | | *Of whom Received.* | *For what Received.* | $ | *cts.* | *Date.* | | *To whom paid.* | *For what paid.* | $ | *cts.* |
| Jan. | 1. | John Parker, | One ton of hay, | 14 | 00 | Jan. | 2. | Town Clerk. | Taxes. | 30 | 00 |
| " | 4. | W. Thompson. | Yoke of fat cattle. | 95 | 00 | " | 3. | Thomas Jones. | Wages on Farm. | 18 | 00 |

**Dr.** **William Sutton in account with the Essex Agricultural Society.** **Cr.**

| | | | | | | |
|---|---|---|---|---|---|---|
| 1849. | | | | 1849. | | |
| Sept. | 28. | To balance of former account, | $825 97 | Sept. | By amount of Premiums and Gratuities, awarded by the Trustees, | 628 11 |
| Oct. | | To Bank Dividends, | 235 14 | Dec. | 24. By amount paid for the Colman Library, | 200 00 |
| Dec. | 24. | To State Bounty, | 600 00 | | By Expenses, as follows: | |
| 1850. | | | | | Of Exhibition of 1849, 324 68 | |
| April | 10. | To Bank Dividends, | 238 24 | | Printing, 190 65 | |
| " | 10. | To amount received from new members, | 66 00 | | Secretary's Salary, 75 00 | |
| | | To balance due Colman Library account, | 13 00 | | | — 590 33 |
| | | | $1,978 35 | | By balance of Cash on hand, | 559 91 |
| | | | | | | $1,978 35 |

N. B. The amount of unclaimed Premiums, this year, is $42, which is carried to the Colman Library account, leaving a balance in its favor of $13, as above.

## FUNDS OF THE SOCIETY.

| | | | | | |
|---|---|---|---|---|---|
| 16 | Shares in the Warren Bank, cost | | 1,596 00 | Notes Receivable, | 1,318 59 |
| 12 | " " Exchange Bank, par | | 800 00 | Cash on hand, as above, | 559 91 |
| 22 | " " Commercial " cost | | 1471 66 | | |
| 7 | " " Mercantile " par | | 700 00 | | $8,717 41 |
| 6 | " " Merchants " par | | 300 00 | Funds in 1849, | 8,983 47 |
| 5 | " " Village " par | | 500 00 | Funds in 1850, | 8,717 41 |
| 3 | " " Salem " par | | 300 00 | | |
| 12 | " " Danvers " cost | | 1,171 25 | Less, | 266 06 |

SALEM, September 26, 1850. E. E. WILLIAM SUTTON, TREASURER.

Salem, Nov. 23, 1850. We have examined the within account, and find the same correctly cast and well vouched.

R. S. DANIELS
ASAHEL HUNTINGTON. } AUDITORS.

# OFFICERS OF THE SOCIETY.

CHOSEN SEPTEMBER 26, 1850.

JOHN W. PROCTOR, of Danvers, *President.*
DANIEL ADAMS, Newbury,
*ASA T. NEWHALL, Lynfield,
BENJAMIN PORTER, Danvers,
RICHARD S. FAY, Lynn.
} *Vice Presidents.*
WILLIAM SUTTON, Salem, *Treasurer.*
ALLEN W. DODGE, Hamilton, *Secretary.*

## HONORARY TRUSTEES.

| | | | |
|---|---|---|---|
| Frederick Howes, | Salem. | James H. Duncan, | Haverhill. |
| Ebenezer Mosely, | Newburyport. | | |

## TRUSTEES.

| | | | |
|---|---|---|---|
| Lewis Allen, | Danvers. | Royal A. Merriam, | Topsfield. |
| John Alley, 3d, | Lynn. | Wingate Merrill, | Danvers. |
| Jacob Brown, | Ipswich. | E. R. Mudge, | Lynn. |
| David S. Caldwell, | Newbury. | Moses Newell, | West Newbury. |
| David Choate, | Essex. | Josiah Newhall, | Lynnfield. |
| Jeremiah Coleman, | Newburyport. | Andrew Nichols, | Danvers. |
| Andrew Dodge, | Wenham. | Thomas E. Payson, | Rowley. |
| George Hood, | Lynn. | Gardner B. Perry, | Bradford. |
| Joseph How, | Methuen. | William R. Putnam, | Danvers. |
| John M. Ives, | Salem. | Dean Robinson, | West Newbury. |
| Josiah Little, | Newbury. | James Stevens, | Andover. |
| Josiah Kimball, | Boxford. | John Stone, Jr., | Marblehead. |
| Joseph Kittredge, | Andover. | Horace Ware, Jr., | Salem. |
| Elisha Mack, | Salem. | Richard P. Waters, | Beverly. |

* Since deceased.

## MEMBERS ADMITTED IN 1850.

| | | | |
|---|---|---|---|
| Isaac Appleton, | Beverly. | David Larcom, | Beverly. |
| Franklin Alley, | Marblehead. | Abraham Lord, | " |
| John I. Baker, | Beverly. | Charles G. Loring, | " |
| Thomas P. Bancroft, | " | Calvin Locke, | Ipswich. |
| Richard S. Bray, | Newbury. | Lyman Mason, | Beverly. |
| Henry M. Brown, | Salisbury. | Appleton Moore, | Amesbury. |
| Samuel Chase, | Beverly. | Warren Ordway, | Bradford. |
| Stephen A. Chase, | Salem. | Charles C. Paine, | Beverly. |
| Moses Coleman, | Newburyport. | Joel R. Peabody, | Topsfield. |
| Joseph Cressy, | Beverly. | Nathaniel Porter, | Beverly. |
| Charles Davis, | " | John Porter, | Wenham. |
| Aaron Dodge, | " | John A. Putnam, | " |
| Elnathan Dodge, | " | Samuel C. Pitman, | Lynn. |
| William E. Dodge, | " | John G. Raymond, | Beverly. |
| Stephen Driver, | Salem. | William Rodgers, | " |
| J. M. Decker, | Ipswich. | Richard S. Rogers, | Salem. |
| Israel O. Edwards, | Beverly. | Nathaniel T. Safford, | Beverly. |
| Seth Friend, | " | Levi D. Shelden, | " |
| Joshua Foss, | Newbury. | Samuel D. G. Standley, | " |
| Jedediah Farnham, | Andover. | William Saunders, | Salem. |
| Josiah B. Gale, | Salisbury. | Samuel S. Standley, | " |
| John A. Green, | Beverly. | Edmund Smith, | Newbury. |
| John J. Gould, | Ipswich. | Farnham Spofford, | Andover. |
| Amos Gould, | Wenham. | Charles A. Stetson, | New York. |
| Franklin Haven, | Beverly. | John Smith, | Hamilton. |
| Daniel Hildreth, | " | Lawson Walker, | Beverly. |
| Moses Hill, | Marblehead. | Henry Wheatland, | Salem. |
| John Kinsman, | Salem. | Henry Whipple, | " |

# LIST OF PREMIUMS & GRATUITIES
## AWARDED IN 1850.

PLOUGHING—DOUBLE TEAMS.

| | |
|---|---|
| Horace Ware, Jr., Salem, first premium, | $10 00 |
| Jonathan Berry, Middleton, second premium, | 8 00 |
| Franklin Alley, Marblehead, third premium, | 6 00 |
| Richard S. Bray, Newbury, fourth premium, | 5 00 |
| John S. Hubbard, Newbury, fifth premium, | 4 00 |

PLOUGHING—SINGLE TEAMS.

| | |
|---|---|
| Jackson H. Pickering, Danvers, first premium, | 8 00 |
| Elijah Pope, Danvers, second premium, | 6 00 |
| Daniel Putnam, Danvers, third premium, | 4 00 |
| William Foster, Andover, fourth premium, | 2 00 |

FAT CATTLE.

| | |
|---|---|
| Jedediah Farnham, Andover, first premium, | 10 00 |
| do do do second premium, | 8 00 |

WORKING OXEN.

| | |
|---|---|
| Richard S. Bray, Newbury, first premium, | 10 00 |
| John Washburn, Lynn, second premium, | 8 00 |
| Jona. Berry, Middleton, third premium, | 6 00 |
| Isaac Standley, Beverly, fourth premium, | 4 00 |

STEERS—THREE YEARS OLD.

| | |
|---|---|
| Jedediah H. Barker, Andover, first premium, | 7 00 |
| David S. Caldwell, Byfield, second premium, | 6 00 |

STEERS—TWO YEARS OLD.

| | |
|---|---|
| Moses Pettingil, Topsfield, second premium, | 4 00 |

STEERS—ONE YEAR OLD,

| | |
|---|---|
| Seth Kimball, Bradford, first premium, | 4 00 |
| David S. Caldwell, Byfield, second premium, | 3 00 |
| James Day, Bradford, gratuity, | 2 00 |

BULLS.

J. G. Walcott, Danvers, first premium, - - - 7 00
Joseph Kittredge, Andover, second premium, - 6 00
David Lake, Topsfield, third premium, - - - 5 00

MILCH COWS.

Farnham Spofford, Andover, first premium, - 10 00
Stephen Driver, Salem, second premium, - - 9 00
Josiah Crosby, Andover, third premium, - - - 8 00
Eben. King, Danvers, fourth premium, - - 7 00

HEIFERS—IN MILK.

Philip L. Osborn, Danvers, first premium, - - 7 00
Daniel Osborn, Danvers, second premium, - 6 00
Henry Hone, Saugus, third premium, - - 5 00

HEIFERS—TWO YEARS OLD.

Sylvester Cummings, Danvers, first premium, - 5 00
Eben Hathorne, Salem, second premium, - - 4 00
John Stone, Jr., Marblehead, third premium, - 3 00

HEIFERS—ONE YEAR OLD.

John S. Hubbard, Newbury, first premium, - - 4 00
Jesse Dame, Beverly, second premium, - - 3 00
George French, Andover, third premium, - - 2 00

MARES AND COLTS.

Dean Robinson, W. Newbury, breeding mare, premium, 10 00
Joseph Kittredge, Andover, four year old colt, premium, 10 00
Ezra Dodge, Wenham, three year old colt, premium, 8 00
Israel Trask, Beverly, two year old colt, premium, 6 00
Moses L. Atkinson, Methuen, one year old colt, prem. 4 00

SWINE.

Seth Kimball, Bradford, boar, first premium, - 5 00
Josiah Crosby, Andover, boar, second premium, - 3 00
John Smith, Hamilton, breeding sow, first premium, 5 00
Wm. G. Lake, Topsfield, breeding sow, second prem. 3 00
John Smith, Hamilton, litter weaned pigs, first prem. 6 00
Allen W. Dodge, Hamilton, litter weaned pigs, 2d prem. 3 00
Abel Burnham, Gloucester, single pig, first premium, 4 00
Henry Poor, Andover, single pig, second premium, 2 00

SHEEP.

Joseph Kittredge, Andover, first premium, - - 7 00
Dean Robinson, West Newbury, second premium, 5 00

JUNE BUTTER.

Jona. Berry, Middleton, first premium, - - 10 00
Perley Goodale, Danvers, second premium, - - 8 00
John Preston, Danvers, third premium, - - 6 00

SEPTEMBER BUTTER.

Elijah Pope, Danvers, first premium, - - 10 00
Nathaniel Felton, Danvers, second premium, - 8 00
Warren Averill, Ipswich, third premium, - 6 00

HONEY.

Abraham Lord, Ipswich, first premium, - - 3 00
John F. Kimball, Boxford, second premium, - - 2 00

NEWLY INVENTED IMPLEMENTS.

David Stiles, Middleton, Eagle Hay Cutter, premium, 7 00
Stephen Granville, Danvers, Washing Machine, prem. 2 00

MANAGEMENT OF FARMS.

Appleton Moore, Amesbury, premium, - - 15 00
Henry Poor, Andover premium, - - - 10 00

RECLAIMED MEADOWS.

John Porter, Wenham, first premium, - - 20 00
Calvin Locke, Ipswich, second premium, - 15 00

GRAIN CROPS.

Henry Poor, Andover, premium, - - - 8 00
Adino Page, Danvers, premium, - - - - 8 00
Joshua Foss, Newbury, premium, - - - 8 00

ROOT CROPS.

Daniel Buxton, jr., Danvers, premium, - - 6 00
Benjamin Rodgers, Andover, premium, - - - 6 00
Lyman Mason, Beverly, - - - - - 6 00

ORCHARDS.

Amos Gould, Wenham, first preminm, - - 10 00
Lewis Allen, Danvers, second premium, - - 8 00
William G. Lake, Topsfield, third premium, - 4 00
Moses Pettingil, Topsfield, first premium, - - 10 00

AGRICULTURAL ESSAYS.

| | |
|---|---|
| Charles L. Flint, Cambridge, premium, | 10 00 |
| Ben. Perley Poore, West Newbury, premium, | 10 00 |
| Allen W. Dodge, Hamilton, premium, | 10 00 |
| By the Committee on Poultry, | 26 00 |
| " " " Fruits, | 36 75 |
| " " " Vegetables, | 17 50 |
| " " " Flowers, | 10 00 |
| " " " Rugs, Carpets, and Counterpanes, | 32 25 |
| " " " Cloth and Hosiery, | 14 62 |
| " " " Metallic and Fancy Articles, | 26 00 |
| " " " Leather, and Articles therefrom, | 54 75 |
| Total, | $740 87 |

ALLEN W. DODGE, Secretary.

Hamilton, January 1851.

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☞ The list of premiums for 1851 will be found in the printed show bills. It is nearly similar to that of former years.

# LIBRARY.

The Library of the Society is kept at the City Hall, in Salem. The City Clerk, (Joseph Cloutman,) acts as the Librarian, and will deliver books under the following regulations:

1. Each member shall be entitled to take from the Library two volumes, on signing a receipt for the same, and agreeing to be accountable therefor.

2. No member shall keep any book more than two weeks, after being notified by the Librarian that the same is wanted by another member.

3. All books belonging to the Library, shall be returned on or before the 15th of November, in each year; that the same may be examined, and the condition of the Library reported to the Trustees.

4. Any member who shall neglect or refuse to conform to these regulations, shall forfeit the privilege of taking books from the Library.

NOTE. All who have paid the initiatory fee of three dollars, towards the funds of the society; all who have received certificates of membership by order of the Trustees; and all ordained ministers of the Gospel, resident within the county, are considered as members. Editors of newspapers published in the county, are also, by vote of the Society, entitled to the privileges of the Library.

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## DONATIONS MADE TO THE LIBRARY IN 1850.

The Plough, Loom and Anvil, 6 Nos. Vol. 3.
American Agriculturalist, 6 Nos. 1850.
Johnston's Lectures on Scientific Agriculture.
Transactions of Michigan State Agricultural Society.
Dadd's Reformed Veterinary.
Leuchar's Treatise on Hot Houses.
} Presented by Editors of Salem Register.

Salem Gazette, for 1846—7—8 and 9, presented by its Editor.
Randall's Sheep Husbandry; Agricultural Addresses; and Harmony of Interests; presented by J. S. Skinner.
Magnetic and Meteorogical Observations, 3 Vols; California Message and Correspondence; presented by D. P. King.

# INDEX.


Mr. Cushing's Address, - - - - - - - - - - 3 to 19
Introductory Remarks, - - - - - - - - - 19 to 22
Report on Milch Cows, - - - - - - - - - - 22 to 27
Statement of Farnham Spofford, - - - - - - 27 to 28
" Stephen Driver, - - - - - - - 28
" Josiah Crosby, - - - - - - - 28
" Eben King, - - - - - - - - 28 to 29
" John Nichols, - - - - - - - 29 to 30
" Thomas G. Dodge, - - - - - - 30
Report on Heifers, - - - - - - - - - - 31
Statement of Daniel Osborn, - - - - - - - 32
" Philip L. Osborn, - - - - - - - 32
" Sylvester Cummings, - - - - - - 32
Report on Working Oxen, - - - - - - - - - 33 to 34
" Steers, - - - - - - - - - - - 34
" Bulls, - - - - - - - - - - - 35
" Fat Cattle, - - - - - - - - - 35
" Mares and Colts, - - - - - - - - 36
" Swine, - - - - - - - - - - 36 to 37
" Sheep, - - - - - - - - - - 37
" Fancy Articles, - - - - - - - - 38 to 48
" Domestic Manufactures, - - - - - - - 48 to 51
" Cloth and Hosiery, - - - - - - - 51
" Leather and Articles therefrom, - - - - - 52 to 53
" Dairy Products, - - - - - - - - 53 to 54
Statement of Jonathan Berry, - - - - - - - 54
" Perley Goodale, - - - - - - - 54 to 55
" John Preston, - - - - - - - 55
" Elijah Pope, - - - - - - - - 56
" Nathaniel Felton, - - - - - - 56 to 57
" Warren Averill, - - - - - - - 57 to 59
" Charles P. Preston, - - - - - - - 59 to 60
" David Baker, - - - - - - - 60
Report on Bees and Honey, - - - - - - - 60 to 62
Statement of Abraham Lord, - - - - - - - 62 to 64
" John F. Kimball, - - - - - - - 64 to 66
Report on Poultry, - - - - - - - - - 66 to 68
" Ploughing—double teams, - - - - - - 68 to 70
" " single teams, - - - - - - - 70
" Improved Agricultural Implements, - - - 71 to 72

Report on Reclaimed Meadows, - - - - - - - 72 to 74
Statement of John Porter, - - - - - - - 74 to 76
" Calvin Loeke, - - - - - - - 76 to 78
Report on the Culture of the Cranberry, - - - - - 78 to 81
" Fruit Trees, - - - - - - - - - 81 to 85
Supplementary Report on Fruit Trees, - - - - - 85 to 87
Letter of Asa T. Newhall, on Fruit Trees, - - - 87 to 88
Statement of Amos Gonld, - - - - - - - - 88 to 89
" Lewis Allen. - - - - - - - 89 to 90
" William G. Lake, - - - - - - - 90 to 91
" Moses Pettingil, - - - - - - 91 to 92
" Royal A. Merriam, - - - - - - 92 to 94
" Francis Dodge, - - - - - - - 94 to 95
Letter of Joshua H. Ordway, - - - - - - 95 to 96
Report on Fruit, - - - - - - - - - - 96 to 98
" Grain Crops, - - - - - - - - - 98 to 99
Statement of Henry Pooor, - - - - - - - 99 to 101
" Adino Page, - - - - - - - 101 to 102
" Joshua Foss, - - - - - - - - 102 to 103
Report on Root Crops, - - - - - - - - 103 to 108
Statement of Daniel Buxton, Jr., - - - - - 108 to 110
" Abraham C. Osborn, - - - - - 110 to 113
" Benjamin P. Ware, - - - - - - 113 to 114
" Benjamin Rogers, - - - - - - 114 to 116
" Joseph Snelling, Jr., - - - - - - 116 to 119
Report on Farms, - - - - - - - - - 119 to 121
Statement of Appleton Moore, - - - - - 121 to 123
" Henry Poor, - - - - - - - 123 to 125
Report on Vegetables, - - - - - - - - 125 to 127
" of the Horticultural Exhibition, - - - - 127 to 143
" on Essays, - - - - - - - - - 143 to 145
Essay on Top Dressings for Mowing and Pasture Lands, - 145 to 164
" Rearing Turkeys, - - - - - - - 164 to 175
" Farm Accounts, Farm Diaries, &c., - - 175 to 184
Treasurer's Report, - - - - - - - - - 184
Officers of the Society, - - - - - - - - 185
Members admitted in 1850, - - - - - - - 185
List of Premiums and Gratuities awarded in 1850, - - - 186 to 190
Library, - - - - - - - - - - - - 190
Index, - - - - - - - - - - - - - 191 to 192